

PUBLIC HEALTH REPORTS

VOL. 42

OCTOBER 7, 1927

NO. 40

POLIOMYELITIS IN THE UNITED STATES

The weekly telegraphic reports received from the State health officers for the 13 weeks from July 3 to October 1, 1927, show 4,570 cases of poliomyelitis, as compared with 1,228 cases for the corresponding period of 1926 and with 3,537 cases for the similar period in 1925. These current telegraphic reports may be incomplete in some instances. Approximately the same number of States are included in the comparisons. Forty-four States reported 635 cases of poliomyelitis for the week ended October 1, 1927, as compared with 681 cases for the preceding week reported by 45 States. A table showing the prevalence of poliomyelitis by States from January 1 to October 1, 1927, is printed on page 2452.

THE DIAGNOSIS OF POLIOMYELITIS¹

By J. P. LEAKE, *Surgeon, United States Public Health Service*

Acute poliomyelitis is a name given to a specific infectious disease which sometimes, but not usually, results in paralysis. The ability to diagnose the disease in the absence of paralysis has only comparatively recently come to us, although Caverly, of Vermont, in 1894, and Wickman, of Sweden, in 1907, described such cases. If paralysis occurs, it is usually after the disease itself is well on its way, so that diagnosis of the nonparalytic stages and the nonparalytic cases is doubly important for the protection of contacts and for the institution of measures of treatment. Though preëminently a disease of children, it is by no means rare in adults; and the less urban the community the higher the average age of those affected. Thus for two reasons the frequently used term "infantile paralysis" is hardly a correct name for the disease.

Draper and Haynes have emphasized two stages in the progress of the disease—first, that of general, or systemic, symptoms, and, second, that of invasion of the central nervous system, by way of the meninges. They mention the interval of apparent recovery or improvement, which frequently occurs between these two stages, but that is

¹ Revision of a paper read before the Augusta County Medical Society at Staunton, Va., August 17, 1917, printed in the *Public Health Reports*, vol. 32, No. 44, Nov. 2, 1917, pp. 1831-1842, and issued as Reprint No. 431.

not the whole story; the disease is very commonly one of remissions at every stage. Though we can not speak with such assurance about the systemic stage, it is probable that here, also, as is repeatedly observed in the meningitic and in the paralytic stages, there are remissions and regressions.

The pathologic picture which will best convey the progress of the disease is first that of a general infection in a sick child or an indisposed adult; second, a meningitic invasion, from a very mild to a severe meningitis; and, third, in some cases an extension of the infection into the anterior horns of gray matter in the spinal cord and to a less extent into other parts of the central nervous system, with weakness, paralysis, and definite localized nervous symptoms. The stages may be clinically simultaneous, though usually meningeal signs precede an evident paralysis. Any two of these three stages may be absent, or at least so slight or transient as to pass undiscovered.

Systemic Symptoms

It must be admitted that the diagnosis in the general or systemic stage can be made only rarely, usually only in the presence of an epidemic. The symptoms may simulate any of the indefinite illnesses of childhood, and in the presence of an epidemic it is well for parents and physicians to treat sick children having fever without a definite proved diagnosis as possible cases of poliomyelitis. Still, there are groupings of symptoms which are very suggestive. Fever is the most common single symptom and may be of any grade. It is usually of short duration, and frequently accompanied by headache, sometimes by flushing. During the acute stage a moderate leukocytosis is usually present, though outbreaks with leukopenia have been described in Germany. The proportion of polynuclear cells varies with the age of the patient, but is not increased as a rule. It is remarkable that in this acute febrile disease, which occurs predominantly in the earlier years of life and which attacks the nervous system, convulsions should be so infrequent; though by no means unheard of, a history of convulsions in most epidemics inclines one against, rather than toward, the diagnosis of poliomyelitis.

The onset of this systemic stage is frequently insidious, but in many cases very acute and often accompanied with vomiting, as in scarlet fever. The vomiting, if it occurs, is not usually prolonged, and by many parents is attributed to an evident indiscretion in diet, and not to the disease. Occasionally there are pains in the stomach. Intestinal symptoms are very frequent, constipation more so than diarrhea. In reports of some epidemics, but none in which I have had personal experience, cases with diarrhea exceed those with constipation. This brings out the fact that in different epidemics, in different localities of the same epidemic, and in different periods in

the same locality, there may be minor differences in symptomology, fatality, and other characteristics of the disease, just as there are evidently differences in virulence and infectivity. Thus, in the Hessian epidemic of 1909, respiratory symptoms predominated, while in the neighboring Westphalian cases of the same year, and in the Stokes River, Devonshire, outbreak of 1911, diarrhea was prominent; the Vermont epidemic of 1894 and the Austrian of 1908 included a considerable proportion of onsets with convulsions. But the general picture throughout the world is so nearly uniform and so different from any other known morbid condition that even without our laboratory evidence we could not help regarding poliomyelitis as a distinct clinical entity, a specific infectious disease, just as different from other diseases as is diphtheria or tuberculosis.

One of the common symptoms which frequently aids in diagnosis at this stage is drowsiness; the child falls asleep repeatedly in the daytime. The opposite symptom, that of restlessness or irritability, is also encountered, even in the same patient; a naturally cheerful, playful child becomes cross and resents interference, objecting sometimes to being petted by its own mother. This change in disposition and the stupor are referable to the sensorium; but even though there may be absolute delirium or coma these do not constitute certain evidence of localized cerebral infection. Two other symptoms, which are very frequent and which when present tend to confirm the diagnosis, are the retention of urine and sweating to a degree out of proportion to the air temperature.

Sore throat is not uncommon, but other symptoms referable to the upper respiratory tract are rather rare, considering the fact that according to a widely accepted theory the virus enters the body by this route. The same peculiarity is observed in epidemic cerebrospinal meningitis.

This description covers the most common symptoms of this stage. Other symptoms, such as chills, cough, dizziness, or rashes, may occur but are not particularly suggestive of the disease. Herpes labialis is rare, an important point in differentiation from epidemic meningitis. It may be argued that there is nothing distinctive about this clinical picture, and that the symptoms enumerated are merely those which may occur in any sick child, and which may pass off without a definite diagnosis being made. But the combination of fever, vomiting, constipation, drowsiness, and irritability, especially when combined with headache, a transient flushing of the face, abnormal sweating, or retention of urine, is enough to make a tentative diagnosis of poliomyelitis if frank cases are occurring in the vicinity.

Cases with gradual onset, malaise, and indefinite symptoms can not be diagnosed before the appearance of meningeal or paralytic

signs, if such signs do appear; but an onset with one or more remissions is very suggestive of poliomyelitis. The more careful the inquiry into the histories, the more frequently will such onsets be found. The remissions are of varying length, and may be as long as one or more weeks.

Meningeal Symptoms

The greater part of the symptoms which I have described as systemic might also be included as evidence of involvement of the central nervous system. But the chief definite symptoms of the slight degree of meningitis commonly met with in poliomyelitis are pain on spinal flexion, hyperesthesia, and increased reflexes. Of these, pain on anterior flexion of the spine as described by Wickman and by Peabody, Draper, and Dochez, is perhaps the most frequent and characteristic. Enough meningeal involvement to cause real opisthotonos or retraction of the head is not the rule in poliomyelitis; but pain on forward nodding of the head, and especially pain on forward bending of the lower spine, is very frequent and characteristic. This latter sign is elicited by placing one of the examiner's arms under the flexed knees and the other under the patient's neck. On attempting to lift the patient in this way a voluntary stiffness and a pain in the back are elicited. In testing for this sign, as in examining the reflexes and motor functions to be mentioned later, it is of great importance to deal with the utmost gentleness. The patient is usually a child, and unless one can obtain his good will and confidence much of the examination is useless. It is well, therefore, to proceed first with the examination of the strength of various muscles and the reflexes before attempting manipulations which may cause pain. The degree of meningitis may or may not be sufficient to give a positive Kernig's sign—inability to extend the knee fully when the thigh is flexed at right angles to the body. One of the most persistent signs of the disease, often remaining after all acute symptoms have subsided, is popliteal pain, which, when investigated, is found to be due to hyper-tonicity of the hamstrings. Other signs of meningitis and consequent increased pressure of the cerebrospinal fluid, such as MacEwen's and DeLepinay's, also more complex signs, such as Brudjinski's, may be elicited. Even Babinski's sign, indicating involvement of the upper motor neurone, may rarely be present.

Definite evidence of meningeal inflammation may be obtained by lumbar puncture and examination of the spinal fluid. It goes without saying that this procedure should be followed if the meningeal symptoms are at all pronounced, in order to relieve the pressure and in order to rule out other forms of meningitis. The increased pressure with a clear or nearly clear fluid containing no organisms, a cell count over 10 per cubic millimeter, and increased albumin and globu-

lin, when found, are of great diagnostic value. But unless the puncture is made by one with some skill in the technique, and under proper aseptic precautions, more harm than good may be done. Flexner and Amoss have shown that even slight hemorrhage into the subarachnoid space may possibly determine an infection which would otherwise be warded off. A thorough examination of the patient and consideration of the history will, in the usual case, enable a diagnosis to be made as positively without as with a lumbar puncture.

One symptom attributed in part to meningeal involvement is pain, or rather hyperesthesia. The tenderness may be of the skin, on deep pressure of the muscles, or on motion of the joints. It is a most characteristic symptom of the disease, yet has frequently misled physicians into the diagnosis of rheumatism or of neuritis. The hypersensitiveness may be general, or of one part of the body only. This is very suggestive of peripheral inflammation, and one would hardly look to the spinal cord for an explanation unless on the watch for poliomyelitis. But no swelling accompanies the pain of poliomyelitis. The distribution of the tenderness, moreover, is not confined to certain joints or certain nerves, but involves areas corresponding rather to segments of the spinal cord.

One other word regarding sensory disturbance deserves to be emphasized for the sake of diagnosis. While the microscopic histology of the disease shows some involvement of the sensory tracts along with the predominant motor disturbance, and while at the beginning we have this clinical evidence of sensory irritation just as we have of motor irritation to be described later, in the case of the sensory system these changes only rarely go on to a degree of degeneration which is easily demonstrable in life. The "root fields" of the skin, corresponding to different segments of the spinal cord, overlap so much that it takes a considerable cord injury to produce loss of sensation in any area. To put it more plainly, anesthesia, if prominent, inclines one against the diagnosis of poliomyelitis. Local loss of sensation is found in some cases of the disease, but it is a minor feature. This is of especial help in the diagnosis of paralysis in adults; if the anesthesia approximates the motor paralysis in degree and extent, with a history dissimilar to that above outlined, the disease may indeed be anatomically poliomyelitis, that is, an inflammation of the gray matter of the spinal cord, but it is not the specific infectious disease which we call "acute poliomyelitis."

The motor phenomena of the meningitic stage may, like the sensory phenomena, be attributed to irritative lesions of the nerve cells rather than simply to a meningitis. One of the most noticeable of these phenomena is a tremor, brought out especially if the limbs are extended unsupported, or if muscular effort is attempted. The parents may also at times notice twitchings, but the tremor is more

characteristic of the disease. Unsteadiness in action, in gait, or in standing, may amount to a pronounced ataxia and has abundant explanation in the pathological anatomy of the disease.

In these examinations in the acute stage it is to be remembered that the chief therapeutic need is rest in bed, and a sick child should not be made to walk across the room, or to undergo muscular exercises more than are necessary to establish the diagnosis and to ascertain indications for local treatment. Usually the examination can be more successfully made by prolonging it over several visits, different portions of the body being examined each time. Physiologic rest in the proper posture often enhanced by supports or removable plaster casts to prevent the stretching of weakened or painful muscles, is indicated for the first month or two, any other treatment being subsidiary to this. Later, passive movements, massage, and especially muscle training, are to be begun; but for both these phases of treatment accurate anatomical diagnosis is essential, in addition to the mere knowledge of the existence and general distribution of the disease.

Hardly any part of the examination of the patient gives more valuable information in poliomyelitis than an examination of the reflexes, combined with which are tests of voluntary movement and tonicity of the muscles; electricity has not proved of much value in either diagnosis or treatment. In the irritative stage we are likely to find irregular increases in the reflex response, with perhaps some spasticity, and as a rule the earliest definitive sign of degenerative changes in the peripheral motor neurone is a diminution in one or more of the reflexes. This is especially important in young children; for in the age group most commonly attacked by poliomyelitis it is difficult to secure voluntary muscular effort at command, and one may be in doubt of anything short of an absolute flaccid paralysis, unless the break in the nerve conduction is revealed by definite absence of reflex. Fortunately, in young children, over one year of age, the reflexes are more regular and more easily elicited than in adults; adults seem to have more inhibitory paths. But even here care must be taken, by repeated trials and by testing under the most favorable conditions, before a reflex is put down as absent. A unilateral increase or decrease in reflexes, present on different examinations, is, of course, more significant than a symmetrical change. In this disease the deep reflexes, obtained by striking tendons, muscles, or bones, are supposedly more important than the superficial reflexes; but much valuable information can be obtained from the latter.

To obtain the deep reflexes, it is worth while to provide oneself with a proper percussion hammer. The percussion hammers sold at present are all unsuitable for this work. The rubber is usually too

hard and the weight in some cases insufficient for older children and adults. The hammer which I use may be improvised from stout wire and two rubber erasers. The rubber should above all be very soft, so that one can demonstrate its pliability to the patient, and so that a sharp blow really gives no pain. Into a slot at one end of the twisted or soldered wire handle is inserted the smaller eraser, a common red or green desk eraser with beveled ends about $2\frac{1}{2}$ inches by $\frac{5}{8}$ by $\frac{3}{8}$ inch, for percussing the tendons of very small infants. For larger children a larger eraser has been found to be more satisfactory. This may be purchased at draftsmen's or artists' supply shops and is about $2\frac{3}{8}$ inches by $1\frac{3}{4}$ inches by $\frac{1}{2}$ inch and very soft. To aid the precise percussion of a tendon one end and one side of the eraser may be beveled with a sharp knife. It is convenient to carry this heavier eraser separate in the pocket and to insert it in the broader end of the handle of the hammer, which is then reversed for use when needed.

Of the deep reflexes one of the most important is the patellar, or knee jerk. This is best elicited, not as is described in some textbooks by supporting the leg under the knee with the examiner's arm or the edge of the bed or chair, but by allowing the quadriceps muscle to relax as completely as possible, the patient being recumbent, the heel resting on the bed, and the knee semiextended at an angle of about 120° . The knee should be hit repeatedly just above the tibial tuberosity and the response of the muscle ascertained by the examiner's hand on the thigh; true contractions are thus distinguished from mere jarring. Sometimes part of the muscle may respond more actively than the remainder. The reflexes in the knees should be accurately compared, one side with the other. Significant differences in response, short of total abolition, may be obtained.

In many adults and some young children there is need to reinforce the reflexes, as it is called, by diminishing the inhibition and tonicity. A method usually successful is to distract attention and cause muscular effort to be made in another part of the body; thus if the knee jerks are being tested the patient is directed to try to pull his clasped hands apart, while looking in another direction.

The Achilles tendon reflex, or ankle jerk, is no less important than the knee jerk in this disease. Other deep reflexes which may be obtained with greater or less regularity in young children are the biceps, elicited by a blow on the arm 1 inch above the fold of the elbow; the triceps, obtained by hitting the back of the arm 1 inch above the olecranon; the scapulo-humeral, giving adduction of the arm on striking the inner side of the scapula with the hammer; the radial, giving supination of the forearm in response to a blow on the styloid process; the hamstring, giving flexion of the leg on percussion of the tendons back of the knee; the tibialis anterior, a blow on

the tendon external to the lower third of the tibia causing flexion and inversion of the ankle; and the peroneal, a blow on the tendon above and behind the external malleolus. It may be remarked that some of these reflexes are not always obtainable in health, but we have the two sides of the body for comparison, and even with the lesser reflexes a constant discrepancy between the two sides is significant. Increase of reflexes in the irritative stage is as important as decrease in the paralytic stage.

Of the superficial reflexes, those of the trunk are of the greatest importance in this disease, for they may give a hint of oncoming paralysis in muscles of the back and abdomen. These paralysis are often overlooked, but are of serious moment on account of resultant disability and deformity. The lumbar reflex is a contraction of the lumbar muscles in response to stroking the skin of the back below the twelfth rib. Half of a wooden tongue depressor which has been broken diagonally is a good instrument for eliciting the superficial reflexes; a pin point is somewhat too sharp. The epigastric reflex is a drawing in of the epigastrium caused by stroking from either nipple downward. The upper, middle, and lower abdominal reflexes consist similarly in localized contractions of the anterior abdominal wall on local irritation of the overlying skin surface. The gluteal reflex, a contraction of the gluteal muscles when the fold of the nates is stroked, is also of considerable importance in this disease. Other useful superficial reflexes are the scapular, elicited by stimulating the skin internal or external to the scapula; the pectoral, an adduction of the arm when the anterior axillary fold is stroked; the cremasteric in the male obtained by stroking the inner thigh; and particularly the plantar, the normal response being a flexion of the toes when the sole is stroked, usually accompanied by a drawing up of the foot, thus demonstrating activity on the part of the anterior tibial, hamstring, and hip flexor muscles.

Some of these reflexes may be found to be exaggerated in the irritative stage, and later diminished or abolished. Diminution of reflexes is probably a step in the direction of paralysis; it is likely, in fact, that if the muscular strength could be tested accurately, some weakness would be made out in those cases where a reflex is definitely decreased. One may be in doubt as to whether a reflex not obtained may be due to natural inhibition or to the disease, but we always have the corresponding reflex on the other side of the body for comparison and with this considerable list some asymmetry is likely to be made out if there is any real motor disturbance.

Even in the absence of an epidemic, a clinical picture such as that described in the preceding section under the heading Systemic Symptoms, combined with pain or resistance on spinal flexion, local hyperesthesia, and tremor, would be sufficient for a presumptive

diagnosis of poliomyelitis in the absence of signs more indicative of some other disease. An asymmetrical reflex disturbance would make this diagnosis more certain, though if the meningeal signs were at all pronounced, other forms of meningitis should first be ruled out by lumbar puncture. No one of these signs or symptoms is necessary, however, and in the presence of an epidemic diagnoses can be made on much less. The more characteristic some of the symptoms are, the less is required in confirmation. Pneumonia and some other severe acute illnesses of childhood may cause meningeal symptoms; the physical examination of the patient should be thorough enough to discover these diseases if present. From findings at lumbar puncture and at necropsy and from most clinical histories it may be doubted whether the paralysis of poliomyelitis ever occurs without some degree of meningitis; but the physician is frequently called to cases where history and evidence of definite meningeal symptoms are both lacking.

Paralytic Symptoms

As the diminution in reflex responses is, strictly speaking, a part of the paralytic phenomena, so also is a general weakness which is often encountered. This weakness is out of proportion to the febrile disturbance and may keep the patient from his usual activities for some time without even being definitely localizable to certain muscle groups. This is one of the reasons for the confusion, which once arose, of poliomyelitis with influenza. It is needless to say that poliomyelitis is a perfectly definite disease, proved by the occurrence of typical paralytic cases with characteristic pathology, while under the name of influenza, in the absence of an epidemic, we tend to hide many illnesses the causation of which we do not know. It might well be that some of our cases called influenza are really unrecognized poliomyelitis, but we can hardly say that influenza is responsible for infantile paralysis when we do not know the cause of influenza. We do not know the cause of poliomyelitis; that is, we know that it is a filterable virus with certain definite properties.

In regard to the paralysis in poliomyelitis, I desire to emphasize four points:

1. A great proportion of the cases, probably the majority, are not recognized as paralytic. These nonparalytic cases have, in the past, been reported in considerable numbers only where epidemics have been very carefully studied. In many instances, in fact, paralysis has been the criterion for diagnosis, and it is right that only paralytic cases should be counted officially for recording the prevalence of the disease and for such legal restrictions as are imposed.

2. Even in the paralytic cases, weakness is the rule, absolute paralysis occurring in less than 20 per cent of the muscle groups affected. If at the bedside we could apply to the transitory cases delicate tests,

such as Lovett's spring-balance test for muscle function and Martin's electrical sensory test, it is likely that we should find slight degrees of impairment of motion and of sensation much more common than at present.

3. The paralysis, when it occurs, is typically flaccid. There may be increased tonicity in the early stages, but in poliomyelitis permanent spastic paralysis is rarer than anesthesia.

4. Though examples are on record of involvement of the nucleus of every cranial and spinal nerve, the distribution of the paralysis is to some extent typical. Certain muscles are much more commonly affected than others, and at times a slight impairment of a single muscle determines the diagnosis.

The legs are more often paralyzed than any other region, the occurrence of toe drop testifying to the frequent involvement of the lower leg muscles. The toe muscles themselves are usually spared. Weight bearing appears to have a deleterious influence on recovery, so that in the old cases, especially, leg paralyses are greatly in excess. Arm paralyses follow next in frequency, particularly those involving the deltoid muscle. In regard to paralyses in other parts of the body, statistics vary in different epidemics and with different observers, not only on account of variations in the degree of delicacy in tests for muscle function, but also because in some series the observations are made early in the acute stage and in others later, when muscle training or other orthopedic treatment is begun; the paralyses of some muscles tend to be very transient and to clear up before the period of isolation is past.

The most common head muscle to be affected is the external rectus of the eye, giving convergent squint. This paralysis of the abducens muscle is often incomplete, and the attempt to obviate double vision may cause enough eye strain to produce ocular congestion. Slight degrees of facial palsies are very frequent, more so than the records would indicate, because recovery is usually prompt in bulbar cases of this sort, and because the palsies are often so slight as to be unnoticed even by the child's parents. The paralysis may be detected only in certain positions of the face; one eyelid or one side of the mouth may droop. Forced movements, such as grinning, or whistling, or raising the eyebrows, will at times bring out the asymmetry, at other times mask it. Throat paralysis, causing difficult swallowing, aphonia, or regurgitation through the nose, is a very serious symptom. Many such cases prove fatal, whether the fatality be due to paralysis of the bulbar centers of respiration, to extension of the paralysis to the neighboring centers of the phrenic nerve in the cervical cord, or to local paralysis in the throat and consequent pulmonary infection. Poliomyelitis typically affects the ganglion cell of the lower motor neurone, and not the higher centers; certainly the great

majority of fatalities from poliomyelitis are due to paralysis of the muscles of respiration directly; that is, the spinal nuclei of the phrenic and intercostal nerves.

Slight pareses of the neck muscles may be detected in an asymmetrical position of the child's head when upright or in an inability to raise or turn the head against pressure when recumbent. Affection of the abdominal and back muscles may be revealed by the skin reflexes previously mentioned, or by lack of strength in certain trunk movements and postures, or even by local bulging of the abdominal wall.

As with the facial and abdominal paralyses, slight degrees of intercostal paralysis are frequently overlooked. A child's breathing is chiefly abdominal, though slightly intercostal, also; but in poliomyelitis wards, cases of entire intercostal inactivity in ordinary respiration are very common. Diaphragmatic paralysis is the most serious phase of poliomyelitis, particularly when combined with intercostal paralysis. It is easily detected in severe cases, the abdomen moving inward in inspiration instead of outward. Severe intercostal paralysis, on the other hand, causes a sinking of the chest wall in inspiration. A piece of cotton may be held near the child's mouth to get the respiratory rhythm in these reversed cases. With such severe paralysis the prognosis is very bad. This respiratory paralysis usually forms a part of the picture in the cases called Landry's paralysis, an ascending or descending paralysis involving other muscles as well. The respiratory difficulty, as a rule, is not like that in laryngeal diphtheria or croup; there is little stridor, or evident muscular exertion in breathing, the patient being too weak. Lesser degrees of intercostal or diaphragmatic palsy may be detected by compressing the abdomen or the chest to watch for consequent respiratory difficulty.

In some of the fatal cases death is so sudden that the cause is not apparent. Indefinite symptoms may have preceded for one or more days without the paralysis being evident to either parents or physician, especially in infants and younger children. Yawning has been frequently observed as a very serious symptom. During the prevalence or suspected prevalence of poliomyelitis it is wise to require necropsies with histological examination of the spinal cord and brain in all the acutely fatal illnesses in children, unless the cause of death can be clearly established to be other than poliomyelitis. Many histories obtainable after death are not at all suggestive of the disease, though microscopic examination demonstrates poliomyelitis in the cervical cord.

In the upper extremity the deltoid is the muscle most typically involved. Tests for the function of this muscle may be made in the upright position by allowing the baby to reach for the percussion hammer or some other object held above his head, first with one

hand and then with the other, or by playing up and down with the arms until the tonicity and muscular strength in each may be estimated. Except the opponens pollicis, which orthopedic tests have shown to be very commonly attacked, the muscles most often impaired in this extremity are those of the shoulder and upper arm.

In the lower extremity, the gastrocnemius and the anterior tibial and lower leg muscles bear the brunt of the attack, though here no part is spared. It has long been recognized that the virus of the disease appears to have an affinity for the lumbar enlargement of the spinal cord. Trivial paralysis or paresis of leg muscles is to be searched for by stimulating the action of each group; with older children the different movements can be asked for systematically, but in infants such reflexes as the plantar must be used. Besides testing the strength of the flexors and extensors of the hip, knee, ankle, and toes, one should not neglect the abductors and adductors of the hip. Comparison of the strength of the two sides is easily made by having the patient recumbent, the knees flexed, with the heels resting on the bed; slight degrees of weakness in ability to bring the knees together or to separate them against the pressure of the examiner's hands may thus be detected. One peculiarity is that paralysis of the rectal and urinary sphincters is unusual except in completely paralyzed, fatal cases.

All motions of the limbs should be made by the examiner repeatedly, to detect lack of tonus and of resistive efforts which may be very definite in the youngest baby, and even in an unruly child. Gait, going up and down stairs and on the level, should be observed in ambulatory cases; also the steadiness with which the patient can stand with eyes closed. The older the patient, the more complete is the examination and the less obscured are the slight degrees of muscular impairment. It is not to be expected that all these tests and reflexes will be made on every patient at the first visit, but enough should be completed to establish the diagnosis; and the more data one has, the more certain will the conclusions be. The patient should in any case be stripped and given an examination thorough enough to exclude other diseases. A complete account of the differential diagnosis would involve a long treatise. Two of the diseases which must always be considered, in addition to those already mentioned, are epidemic or lethargic encephalitis and tuberculous meningitis.

It is evident that the diagnosis of poliomyelitis is not a simple matter, depending on a single factor or sign, but that the whole history and physical examination must be taken into consideration; and, when that is done, there are enough idiosyncrasies and predilections of the disease to enable a diagnosis to be made with as great certainty as is usual in the diagnosis of other diseases, even without what was formerly considered the essential feature of the malady—permanent paralysis.

DIPHTHERIA IN THE UNITED STATES

By JASON WATERMAN, LL. B., *Division of Sanitary Reports and Statistics, United States Public Health Service*

The reports received by the Public Health Service showed that the incidence of diphtheria for the year 1926 was the lowest ever recorded in the United States; but during the early months of 1927 a decided increase in the numbers of cases and deaths was noted.

Since 1900, when annual publication of death statistics was begun by the Bureau of the Census, there has been a general decrease in the diphtheria death rate. There is no doubt that the rates prevailing at the beginning of the present century were lower than those of a few decades earlier, but comparable general statistics are not available for years before 1900.

The Bureau of the Census has reported the diphtheria death rates since 1900 in the death registration area of the United States as follows:

Year	Diphtheria deaths per 100,000 population	Year	Diphtheria deaths per 100,000 population
1900.....	43.3	1913.....	18.9
1901.....	34.0	1914.....	17.9
1902.....	30.8	1915.....	15.7
1903.....	31.7	1916.....	14.5
1904.....	28.3	1917.....	16.6
1905.....	23.6	1918.....	13.9
1906.....	25.4	1919.....	14.7
1907.....	23.6	1920.....	15.3
1908.....	21.5	1921.....	17.7
1909.....	20.4	1922.....	14.6
1910.....	21.4	1923.....	12.1
1911.....	18.9	1924.....	9.4
1912.....	18.2	1925.....	7.8

The death registration area included 40.5 per cent of the population of the United States in 1900 and 89.4 per cent in 1925.

A similar decline in the death rate from diphtheria is shown by the experience of the Metropolitan Life Insurance Co., which covers part of Canada in addition to the United States. The following figures are taken from the Bulletin, issued by that company for the month of January, 1927:

Death rates from diphtheria per 100,000 population in the industrial department, Metropolitan Life Insurance Co.

Year	Rate	Year	Rate
1911.....	27.3	1921.....	23.8
1916.....	21.0	1922.....	18.0
1917.....	24.6	1923.....	15.5
1918.....	19.3	1924.....	12.7
1919.....	20.9	1925.....	10.2
1920.....	22.1	1926.....	9.5

The following table gives a summary of the diphtheria case and death rates computed from reports of State health officers to the Public Health Service from 1916 to 1926, inclusive:

Year	Number of States included	Cases per 100,000 population	Deaths per 100,000 population	Deaths per 100 cases
1916.....	24	131.7	12.3	9.4
1917.....	35	136.1	14.2	10.5
1918.....	33	107.4	12.6	11.7
1919.....	32	139.7	12.9	9.2
1920.....	35	156.7	14.4	9.2
1921.....	43	204.0	16.5	8.1
1922.....	44	164.1	14.2	8.7
1923.....	46	133.3	11.5	8.6
1924.....	46	107.3	8.8	8.2
1925.....	46	85.2	7.6	8.0
1926.....	41	80.5	7.1	8.8

The above figures show that there was a general increase in diphtheria cases and deaths for several years prior to 1921, with a steady decrease from 1921 to 1926.

These wavelike movements, covering a period of several years, are characteristic of the history of the disease, but the later waves are generally lower than those preceding, as the general trend has been downward.

The following table shows the number of cases of diphtheria reported for the first six months of the years 1920 to 1927, inclusive, by the health officers of 35 States. These States include all for which data for the full eight-year period are available at the time of writing.

1920.....	54,928
1921.....	74,560
1922.....	60,820
1923.....	55,603
1924.....	54,960
1925.....	41,020
1926.....	33,684
1927.....	45,165
Total.....	420,740

The incidence of diphtheria was greater during the first half of 1927 than during the corresponding period 1925 or 1926, but less than that for the similar period of any preceding year.

The case rate for the first half of 1927, figured on an annual basis, is 97.04 cases per annum per 100,000 population. This rate, however, does not appear to be fairly comparable with rates for the full year, as diphtheria has a marked seasonal prevalence, being usually most prevalent during October, November, and December.

The reports for the earlier months of 1927 were relatively more favorable than the reports for the later months of the half year, as

shown by the following table, which gives a comparison, by months, of the cases of diphtheria reported during the first six months of 1927 with the average number for the corresponding months of the seven-year period 1920 to 1926.

Diphtheria cases reported for first six months of 1927, compared with the averages for the first six months of the years 1920 to 1926, inclusive

Month	Average number of cases reported, 1920-1926	Cases reported, 1927	Per cent decrease
January.....	12,901	8,808	31.7
February.....	9,715	7,739	20.3
March.....	9,176	8,081	11.9
April.....	7,781	7,311	6.0
May.....	7,462	6,823	8.5
June.....	6,618	6,398	3.3
Total.....	53,653	45,165	15.8

A comparison of the reports arranged according to sections of the country shows that all of the general divisions except the West North Central and the Mountain States had higher rates for the first six months of 1927 than for the corresponding period of 1926.

The following table gives a comparison of the numbers of cases of diphtheria reports in different sections of the country during the first half of 1927 with the average number reported during the corresponding period of the years 1920 to 1926, inclusive.

Average number of cases of diphtheria reported in 35 States¹ during the first six months of the years 1920 to 1926, compared with the first six months of 1927

	Average number of cases reported first six months, 1920-1926	Number of cases reported in first six months of 1927	Per cent increase (+) or decrease (-) in 1927
35 States ¹	53,653	45,165	-15.8
New England States.....	5,746	3,630	-36.8
Middle Atlantic States.....	19,844	18,372	-7.4
East North Central States.....	13,317	9,977	-25.1
West North Central States.....	3,831	2,215	-42.2
South Atlantic States.....	4,250	4,687	+10.3
East South Central States.....	727	1,112	+53.0
West South Central States.....	384	536	+39.6
Mountain States.....	388	266	-26.3
Pacific States.....	5,166	4,350	-15.8

¹ The States included are: *New England States*—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut; *Middle Atlantic States*—New York, New Jersey, and Pennsylvania; *East North Central States*—Ohio, Illinois, Michigan, Wisconsin; *West North Central States*—Minnesota, Iowa, North Dakota, South Dakota, Nebraska and Kansas; *South Atlantic States*—Maryland, District of Columbia, Virginia, West Virginia, North Carolina, Georgia, Florida; *East South Central States*—Alabama and Mississippi; *West South Central States*—Louisiana; *Mountain States*—Montana, Idaho, Wyoming, and Arizona; *Pacific States*—Washington, Oregon, and California.

Data as to deaths from diphtheria during 1927 are not available for most of the States, but reports from cities include the number of deaths as well as of cases.

The following table gives the number of cases of diphtheria, with the number of deaths from this disease, and the fatality rate, in 16 large cities of the United States during the first 28 weeks of the years 1920 to 1927, inclusive. The cities included are Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, Milwaukee, New York, Newark, Philadelphia, Pittsburgh, St. Louis, San Francisco, and Washington. These are the cities having 400,000 population or over in 1920.

Diphtheria cases, deaths, and fatality rates in cities having more than 400,000 population, for the first 28 weeks of the years 1920 to 1927, inclusive

Year	Cases	Deaths	Deaths per 100 cases	Year	Cases	Deaths	Deaths per 100 cases
1920.....	26,086	2,210	8.5	1924.....	21,804	1,466	6.7
1921.....	32,724	2,165	6.6	1925.....	17,864	1,208	6.8
1922.....	22,668	1,786	7.9	1926.....	15,556	1,184	7.6
1923.....	20,458	1,460	7.3	1927.....	22,949	1,475	6.4

Rates would give a better basis for comparison than the number of cases and deaths, as all of these cities are increasing in population, but, unfortunately, authoritative population estimates are not available for the later years for some of the cities.

The Statistical Bulletin of the Metropolitan Life Insurance Co. for July, 1927, gives the following comparison of the diphtheria death rates per 100,000 persons exposed in the company's industrial department for the first six months of the years 1925, 1926, and 1927:

White:	Death rate
January-June, 1925.....	12.7
January-June, 1926.....	10.1
January-June, 1927.....	11.8
Colored:	
January-June, 1925.....	5.3
January-June, 1926.....	6.2
January-June, 1927.....	6.7

It is evident that the remarkable decline in the prevalence of diphtheria which has been noted since the year 1921 was checked during the early months of 1927. The reaction is similar to the beginning of the upward movement of one of the waves which have been frequent in the history of diphtheria since records have been kept. If the disease follows the usual course, an increase in the number of cases may be expected. This statement should not be taken as a prediction, however, since the expectation of an increase due to natural causes may be offset by the more general employment of artificial immunization.

THE DIPHTHERIA SITUATION IN CHICAGO

By HERMAN N. BUNDESEN, M. D., Sc. D., *Commissioner of Health, Chicago, Ill.*

Health administrators in most large cities of this country, and, according to recent reports from Germany, in that country also, have noticed a marked increase in diphtheria mortality since the beginning of 1927. There has also been a perceptible increase in the morbidity rates from diphtheria, but this has been less notable than the increase in mortality.

In Chicago this increase first became noticeable in January, when the number of deaths from diphtheria rose to more than double the number recorded in January, 1926. For the first seven months of this year the number of diphtheria deaths has been nearly double the number for the corresponding period in 1926 and the number of cases recorded has been 50 per cent greater than for the same period last year.

At the same time, reports from practicing physicians and from the Municipal Contagious Disease Hospital called the attention of the health department to the unusually malignant type of diphtheria prevalent in the city. Patients seen on the second or third day of the disease, most of whom receiving an adequate dosage of antitoxin usually recover, often fail to respond to the regular treatment, and some cases given antitoxin within 24 hours of onset have died in spite of what is ordinarily considered adequate dosage. The septic, or so-called "bull-necked," type of diphtheria has been unusually prevalent and highly fatal.

Laryngeal diphtheria has not prevailed to any unusual extent. For the first seven months of this year 16 per cent of the cases admitted to the Municipal Contagious Disease Hospital were recorded as laryngeal, as compared with 16.6 per cent of all cases for the corresponding period in 1926.

That the type of diphtheria occurring in Chicago is actually more malignant than that experienced recently is further indicated by the fatality rates among patients in the Municipal Contagious Disease Hospital. During the first seven months of 1926 there occurred 30 deaths out of 259 admissions, a case fatality rate of 11.6, while up to August 1, this year, 71 deaths in a total of 467 admissions were recorded, making a case fatality of 15.2.

Analysis of the age distribution of cases of and deaths from diphtheria in Chicago shows no significant changes during the recent increase of the disease. There has been a slight relative change in the proportion of deaths in children under 5, especially since 1924, as shown by Table 1.

Diphtheria in Chicago, 1916-1927—Percentage of deaths under 5 years of age

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Per cent under 5 years.....	65.3	60.6	62.3	62.7	58.0	60.5	63.1	58.1	57.0	43.0	52.2	52.7

There have been no selective geographical grouping of cases and no undue prevalence in any special racial or economic groups in the past year. Three or four moderate school outbreaks have been recorded, and two or three neighborhood foci of infection have been detected, but there has been no evidence that any common factors, such as milk or food, have in any way contributed to the spread of infection.

The occurrence of diphtheria in Chicago since 1915, by morbidity, mortality, and case fatality, is presented in Table 2.

TABLE 2.—*Diphtheria in Chicago—Morbidity, mortality, and case fatality rates 1916–1927*

Year	Rates per 100,000		Case fatality	Year	Rates per 100,000		Case fatality
	Morbidity	Mortality			Morbidity	Mortality	
1916.....	277.3	31.5	11.3	1922.....	260.0	10.8	7.6
1917.....	400.4	48.2	12.0	1923.....	202.1	12.6	6.2
1918.....	217.7	27.7	12.6	1924.....	124.9	7.3	5.9
1919.....	237.8	22.1	9.3	1925.....	97.7	8.0	8.2
1920.....	284.5	23.1	8.1	1926.....	83.4	7.4	8.8
1921.....	334.9	24.3	7.2	1927 ¹	126.6	12.8	10.1

¹ 7 months, on annual basis.

From inspection of the data and the accompanying chart several facts are apparent—

1. That no significant reduction in the morbidity rate occurred from 1916 until 1923.
2. That the morbidity declined rapidly from that time until 1927.
3. That the mortality rate had declined fairly steadily from 1917 up to 1927 and that it declined more rapidly than the morbidity rate from diphtheria.
4. That the case fatality had fallen consistently from 1918 to 1925, and during that time was an important factor in the decline of the mortality rate.
5. That although the morbidity rate continued to fall up to the beginning of 1927, the case fatality has been rising sharply since 1924 and at present is higher than at any time since 1918.

SUMMARY

(1) During the first seven months of this year, 50 per cent more cases of and nearly 100 per cent more deaths from diphtheria have occurred in Chicago than were recorded for the corresponding months of 1926.

(2) This increase in the death rate from diphtheria has been due in part to a corresponding increase in morbidity, but the major factor has been a marked rise in the case fatality rate of the disease.

(3) Clinically, the type of diphtheria in Chicago this year is more malignant than that for several years past. The severe toxic and septic cases often fail to respond to treatment, even when antitoxin is given early and in usually adequate doses.

(4) The greater prevalence of diphtheria in Chicago during 1927 has not been due to infection by milk, food, or epidemic foci, but represents a generalized increase in the endemic rate.

DIPHTHERIA IMMUNIZATION IN CHICAGO

In a recent communication Dr. Herman N. Bundesen, Commissioner of Health of Chicago, has the following to say regarding diphtheria immunization in that city:

Immunization with toxin-antitoxin was begun in Chicago in 1918, since which time a total of 211,500 toxin-antitoxin injections have been given.

For the past four years the greater part of diphtheria immunization in Chicago has been performed on the younger groups of school children. Toxin-antitoxin has been offered to all children for whom parental consents could be obtained in the kindergarten and first grade of all schools. Free immunization has also been offered on Saturday mornings at 10 infant welfare stations, for the purpose of reaching children of preschool age.

In view of the increased prevalence and fatality of diphtheria this year in Chicago, the city health department has started an intensive campaign to secure the immunization of a majority of children in the more susceptible age groups.

Every physician in the city has been advised of the diphtheria situation and urged to immunize as many children as possible in his private practice. Toxin-antitoxin for this purpose is supplied free by the department of health.

A health department bulletin on diphtheria and toxin-antitoxin has been sent to the mother of every child in Chicago under 2 years of age.

To give further publicity to the campaign, numerous talks on the use of toxin-antitoxin are being broadcast by members of the health department, articles are being published in the leading newspapers, and translations of these articles appear in the foreign-language papers.

Since all children immunized are under 7 years of age, the requirement of a preliminary Schick test has been omitted and all children for whom parental consents are obtained are given the three injections of toxin-antitoxin.

To facilitate the immunization of preschool children, parents are allowed to bring younger brothers and sisters of children in the kindergarten or first grade to the school clinics for the prophylactic treatments. Also the number of preschool clinics at infant welfare stations has been tripled and sufficient staff has been provided to handle the extra work.

The Infant Welfare Society, the Visiting Nurse Association, and other child health organizations are cooperating with the health department in every possible way to speed up the work of immunization.

Immunization of nurses on the staff of the Municipal Contagious Disease Hospital has been a routine procedure since 1918. All nurses are Schick-tested on admission, and those found to be susceptible to diphtheria are immunized with toxin-antitoxin. Since 1918 no cases of diphtheria have developed among nurses so immunized.

DIPHTHERIA IN NEW YORK CITY

According to the Weekly Bulletin for September 10, 1927, published by the Department of Health of New York City, the first six months of 1927 have recorded an increase in diphtheria morbidity and mortality in that city which emphasizes "the need of immunizing all young children with toxin-antitoxin." Although this rise causes some surprise and apprehension, the decline in the morbidity and mortality rate for diphtheria in New York City for the first seven years has been irregular, as shown by the following figures:

Year	Cases	Deaths	Year	Cases	Deaths
1919.....	14, 014	1, 230	1923.....	8, 050	547
1920.....	14, 166	1, 045	1924.....	9, 687	714
1921.....	15, 110	891	1925.....	9, 051	663
1922.....	10, 427	874	1926.....	7, 531	477

The Bulletin states:

This marked though irregular decrease has been attributed partly to the general campaign against diphtheria, and partly to the immunization with toxin-antitoxin.

Those who have been studying the diphtheria situation know that there are several factors which influence the incidence of this disease, as a result of which there is an increase over a period of two or three years, and then a decrease. There is every reason to believe that the slight increase during the first half of 1927 is simply due to one of those unknown factors which, in the course of every year or two, cease to exist. Then those influences which are steadily resulting in an improvement will make for a rate lower than the previous record. For this reason the full value of toxin-antitoxin can not be determined in New York City simply by the number of cases of diphtheria and by the number of deaths occurring in any one year. This is doubly true, for in spite of the large number of children who have been immunized, only a small percentage of the younger children have received this protection. It is well known that most of the cases and practically all of the deaths occur among preschool children. The immunization of this group by the private physician and by the health department inspectors has only begun.

The Bulletin also gives some interesting data regarding the administration of toxin-antitoxin, based on 150 cases of diphtheria reported by physicians. The information was furnished by the Research Laboratory of the department of health. Only three, or 2 per cent, of the patients had received toxin-antitoxin. In none of the cases had the three months elapsed which is usually required to develop immunity, and one of the patients had received only two injections. In one of the three patients receiving the toxin-antitoxin the diagnosis was doubtful. The figures are given below:

Report of an investigation of 150¹ diphtheria cases to determine the percentage having had toxin-antitoxin previous to present illness (July 9, 1927)

Age	Mild	Moderate	Severe	Total
Up to 5 years.....	36	23	16	75
6 to 10 years.....	32	11	9	52
11 to 15 years.....	8	1	2	11
16 years and over.....	4	7	1	12
Total.....	80	42	28	150
Number of cases having received toxin-antitoxin.....	1	1	1	3

¹ In all, 155 cases were investigated, 5 of these proving to be simply bacillus carriers, 2 of which had received toxin-antitoxin. These are excluded.

² In 1 case series of injections complete, but insufficient lapse of time. (Received 3 injections of toxin-antitoxin 2 months previous to present illness.)

³ 1 case of doubtful diagnosis. Possibly only an influenzal pharyngitis.

⁴ In 1 case immunization incomplete; insufficient lapse of time. (Received 2 injections of toxin-antitoxin 4 weeks previous to present illness.)

INCREASE OF DIPHTHERIA IN BERLIN

According to the correspondent of the Journal of the American Medical Association in Berlin, there was an increase in both the prevalence and case mortality of diphtheria in that city in 1926. The correspondent states:¹

Since the introduction of diphtheria antitoxin in 1894, the morbidity and the mortality of diphtheria have decreased. In Berlin, since the beginning of 1926, the number and the character of diphtheria cases have undergone a change, and cases of malignant diphtheria have been observed, together with a rather high mortality. The special characteristics are foul smelling discharge from nose and mouth, marked glandular swellings, and all the symptoms of vascular disturbances, including numerous hemorrhages. In the majority of these cases, after a relatively short illness, death ensues from cardiac paralysis, supplemented by a grave kidney involvement. Last year two members of the department of infectious diseases of the Rudolf-Virchow Municipal Hospital published a report on the cases occurring in that hospital. The percentage of fatal cases increased from 6 in 1923 to 17 in 1926, and in Old-Berlin the total number of diphtheria cases increased from 1,068 in 1923 to 1,421 in 1926, and the percentage of mortality rose from 7.58 to 11.1 per cent. The statement was made that, in these cases of grave diphtheria, diphtheria antitoxin often fails to protect. Only by beginning the treatment at the earliest possible moment and employing the maximum doses was there any prospect of preserving life. * * * In the Deutsche Medizinische Wochenschrift, the observations made in the Rudolf-Virchow Hospital have been confirmed by Professor Finkelstein and his assistants in the municipal children's hospital. They also saw many severe cases of diphtheria, and they, too, are of the opinion that in most of the cases there was a streptococcus infection. They could not accomplish much with diphtheria antitoxin.

It is stated that considerable success attended the use of the streptococcus antitoxin of Prof. Fritz Meyer, of Berlin, an antitoxic serum obtained by immunizing horses with highly virulent streptococci and also with a highly potent streptococcus toxin. A marked advantage of this serum as compared with other streptococcus serums is stated to be in the fact that its potency is assured not only by so-called polyvalence but also because it contains demonstrable antitoxins against the poisons common to all streptococci. In the treatment of 18

¹ J. A. M. A., Sept. 17, 1927, p. 982.

patients between January and June, 9 patients were given only diphtheria antitoxin and 9 diphtheria antitoxin and the streptococcus serum, with results decidedly in favor of the latter. It is noted, however, that the series of cases is too small to furnish an adequate basis for conclusive judgment.

CASES OF POLIOMYELITIS REPORTED BY STATES, JANUARY 1 TO OCTOBER 1, 1927

The table below shows the prevalence of poliomyelitis in the United States from January 1 to October 1, 1927, as reported to the United States Public Health Service by the State health officers. These reports are preliminary and the figures may be incomplete in some instances.

Cases of poliomyelitis reported by State health officers, January 1–October 1, 1927

State	Week ended—												
	January	February	March	April	May	June	July	Aug. 6	Aug. 13	Aug. 20	Aug. 27	Sept. 3	Sept. 10
													Sept. 17
													Sept. 24
													Oct. 1
Alabama.....	1	1	2	2	0	5	2	0	1	2	1	0	1
Arizona.....	1	0	0	3	6	12	14	0	1	4	0	0	2
Arkansas.....	0	0	1	0	1	9	5	1	0	1	2	1	0
California.....	13	9	7	7	20	75	215	56	63	44	48	38	40
Colorado.....	1	3	0	0	0	1	2	0	1	1	2	1	2
Connecticut.....	2	1	1	2	1	1	4	11	8	17	12	19	11
Delaware.....	0	0	0	0	0	0	0	0	0	0	0	1	0
District of Columbia.....	0	0	0	1	0	0	0	0	2	0	1	0	0
Florida.....	5	0	1	3	1	3	4	0	2	0	2	1	4
Georgia.....	1	2	0	0	1	1	6	1	0	1	0	3	0
Idaho.....	0	1	0	0	0	0	0	0	0	0	0	0	0
Illinois.....	2	5	5	4	5	5	26	6	7	16	24	25	35
Indiana.....	1	0	0	0	0	1	1	2	3	2	4	7	6
Iowa.....	2	1	0	0	1	0	1	0	1	3	3	7	5
Kansas.....	3	4	5	2	1	5	15	4	4	10	3	9	9
Louisiana.....	1	1	1	2	7	10	20	3	1	2	2	1	0
Maine.....	1	1	1	0	0	1	0	0	0	1	7	6	0
Maryland.....	0	1	0	0	0	1	0	0	1	0	0	0	0
Massachusetts.....	0	2	3	4	7	11	23	10	28	38	55	60	92
Michigan.....	8	1	4	0	0	3	7	3	2	9	10	15	19
Minnesota.....	1	2	1	0	3	2	7	1	1	1	3	9	2
Mississippi.....	1	0	4	3	4	6	2	0	1	2	1	1	0
Missouri.....	2	3	1	4	2	0	4	15	8	2	6	6	16
Montana.....	0	1	0	0	0	0	3	1	0	0	0	0	0
Nebraska.....	1	0	1	0	1	1	0	0	1	1	4	3	5
New Hampshire.....	1	1	0	0	0	0	1	1	1	4	3	5	4
New Jersey.....	1	2	1	2	2	7	12	17	13	22	20	23	34
New Mexico.....	1	1	0	0	1	3	59	9	9	8	6	5	3
New York.....	15	6	4	12	8	10	38	25	46	68	58	85	71
North Carolina.....	2	3	1	0	0	1	0	1	0	0	3	0	2
North Dakota.....	1	0	9	4	3	1	1	0	6	0	2	2	3
Ohio.....	6	7	2	1	0	2	32	(1)	(1)	65	128	73	85
Oklahoma.....	3	2	1	1	1	4	16	8	11	8	12	6	10
Oregon.....	0	0	0	2	0	0	2	2	1	12	3	7	11
Pennsylvania.....	4	1	3	1	2	2	8	5	4	7	8	49	41
Rhode Island.....	1	0	1	1	1	1	0	0	0	1	4	2	3
South Carolina.....	11	10	3	6	7	7	8	2	2	1	0	2	6
South Dakota.....	2	1	1	2	0	0	0	0	0	0	0	0	5
Tennessee.....	1	2	1	0	0	5	7	1	5	1	4	0	5
Texas.....	0	0	0	0	1	0	20	10	19	15	12	28	20
Utah.....	0	0	0	0	0	0	4	1	0	3	0	1	0
Vermont.....	0	0	0	0	0	0	2	0	0	0	0	1	0
Virginia.....	1	6	3	1	4	6	1	2	0	0	1	0	0
Washington.....	1	1	3	2	1	1	1	0	0	1	3	7	7
West Virginia.....	0	0	1	0	0	2	2	0	0	8	11	16	17
Wisconsin.....	3	3	3	2	4	3	5	2	2	7	2	4	10
Wyoming.....	0	0	1	0	0	0	1	1	0	0	1	0	0
Total.....	167	85	76	74	96	207	583	190	348	382	463	542	593
													712
													681
													635

No weekly report received; 271 cases reported for month of August.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Keeping of swine in town enjoined.—(Massachusetts Supreme Judicial Court; *Town of Lexington v. Miskell*, 157 N. E. 598; decided July 5, 1927.) The board of selectmen of the town of Lexington, acting as a board of health, adopted regulations governing the keeping of swine. The defendant kept from 400 to 600 swine on his premises within the town without obtaining a permit as required by the regulations. The board of health determined that the keeping of swine by the defendant was a menace and harmful to the inhabitants of the town, and issued an order prohibiting the defendant from keeping swine on his premises. The order was not complied with and the town brought a suit to enjoin the defendant from continuing to exercise the trade or employment of keeping swine in the town. The decree of the lower court enjoined the defendant from keeping swine in the town in violation of the regulations of the board of health, and this decree was affirmed by the supreme court.

Conviction for violation of smallpox quarantine affirmed.—(Washington Supreme Court; *City of Seattle v. Cottin*, 258 P. 520; decided August 9, 1927.) An ordinance of the city of Seattle provided in part as follows:

SEC. 8. It shall be unlawful for any person to visit a person sick with * * * smallpox * * * and afterwards appear upon the streets, alleys, or other public places in the city of Seattle, or go into any house, building, or other place in said city where they would be likely to aid in spreading said disease until they shall procure from the health officer of the city of Seattle a certificate that they are free from danger of communicating the disease to which they have been exposed: *Provided, however,* That this section shall not apply to physicians, quarantine inspectors, or the health officer when in the exercise of their duties as such physician or officers.

SEC. 14. It shall be unlawful for any person to violate or refuse to obey any lawful order or regulation of the board of health, the health officer, or any quarantine officer made within the powers conferred by the charter or ordinances of the city of Seattle upon the officer making such order, or to in any manner obstruct or interfere with the board of health, health officer, or any appointee of the board of health in the performance of duties imposed by the charter or ordinances of the city of Seattle.

A regulation of the State board of health relating to smallpox provided as follows:

(e) Persons not living on the premises who are susceptible (not vaccinated nor having had previous infection), and who have been exposed, shall be isolated or kept under the observation of the health officer or physician for a period of 18 days. Exposed immunized persons are exempt from isolation if successfully vaccinated within seven years or if they have had the disease. Submission to vaccination exempts the individual from isolation.

The defendant, a drugless healer having a certificate to practice mechanotherapy, visited, in his professional capacity, a person in Seattle infected with smallpox. The chief quarantine officer of the

city requested the defendant to submit to vaccination or go into quarantine. The defendant at first agreed to go into quarantine, but afterwards refused to remain in quarantine and left the city for about 18 days. In a prosecution for an alleged violation of the city ordinance it was admitted that at the time of being exposed to smallpox the defendant had not been vaccinated for a period of 15 or 20 years and had had no previous infection from smallpox. The defendant contended that he was entitled to be included within the class known as physicians and within the exception under section 8 of the ordinance. In affirming the conviction of the defendant, the supreme court declared that it was unnecessary to pass on the defendant's contention and disposed of the case in the following language:

In so far as the ordinance of Seattle exempts physicians of any kind or school, it must yield to the superior authority of the State board of health which has adopted the rule (subdivision [e], section 25) above quoted. Under those provisions no one is exempted except exposed immunized persons, those who have been successfully vaccinated within seven years, or those who submit to vaccination—under none of which classes can appellant claim exemption.

We consider further discussion of the questions raised in this case unnecessary.

PUBLIC HEALTH ENGINEERING ABSTRACTS

The water supplies of Quebec Province. T. J. Lafreniere. *Canadian Engineer*, vol. 52, No. 10, March 8, 1927, pp. 97 and 100-101. (Abstract by R. E. Thompson.)

Data are given on the water supplies in the Province of Quebec. There are 550 water-supply systems, serving a population of 1,400,000. As there is no underground water supply in the Province, except very small springs, most of the supplies have their source in rivers, all of which are polluted. There are 46 municipalities, having an aggregate population of 850,000, which are supplied with filtered water from 31 plants, and there are 19 chlorinating plants supplying 25 municipalities, with a population of 150,000. There are, however, 300 small villages using river water that is polluted. Largely as a result of water purification, the typhoid death rate in the Province has been reduced from 26 per 100,000 prior to 1916 to 8.9 in 1925, but it is still too high. In Montreal, where the filtration plants are operated under technical supervision, the rate in 1926 was 5 per 100,000. Every plant in the Province is visited by a representative of the provincial bureau of health from three to six times each year, and a system has been devised whereby plants can send daily samples for examination. At the present time 34 municipalities are availing themselves of this system. It has been found that many small-plant operators are not sufficiently interested to maintain chlorinating equipment in proper repair, and in some cases even to operate it continuously, and it is suggested that filter operators be required to pass a test and secure a certificate of proficiency which could be withdrawn if plant or equipment should be neglected.

Résumé of progress in chlorination. Norman J. Howard. *Canadian Engineer*, vol. 52, No. 10, March 8, 1927, pp. 116-118. (Abstract by R. E. Thompson.)

The early history of chlorination is reviewed briefly, and recent developments are discussed in some detail with special reference to Toronto. The employment of prechlorination is extending. In Toronto the cost of operation of the

drifting sand plant has been reduced by \$150,000 over a period of four years by applying chlorine to the raw water instead of alum at such times as the water is physically good. With moderately turbid water considerable economy can be effected by applying small doses of chlorine and reducing the alum to an amount just sufficient for clarification. The observation that chlorination aids coagulation has been confirmed at Toronto. Other advantages of prechlorination are the reduction of filter load in heavily polluted water, increased rates of filtration, and an additional safeguard in the treatment of water subject to rapid changes in quality. Chlorine is being increasingly employed for destruction and prevention of algal growths in filter underdrains and sedimentation basins. Applications of excess chlorine and, subsequently, copper sulfate were ineffective for reducing the loss of head which rapidly increases in slow sand filters at Toronto during a two-month period each spring. The recently inaugurated super-sand dechlorination treatment for prevention of taste at Toronto is outlined and discussed.

Treatment of water in coagulating basin and handling of basin. George D. Norcom. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 112-122. (Abstract by J. K. Hoskins.)

This article comprises a round-table discussion of the subject of coagulating basins. The following topics are treated: Need for cleaning is generally indicated by the passage of large amounts of dead floc causing short filter runs as well as decreased coagulation efficiency resulting in higher bacterial counts of the effluent; hopper-bottomed basins afford easy cleaning—squeegees may be used in flat basins if they are not too deep; diffusion walls are most effective when no openings are provided near the bottom to allow sweeping up of the bottom floc; larger holes are more efficient than small ones, though care must be taken to prevent short circuiting; milky water from the coagulating basin can be relieved by using a larger amount of alum; change in brand of alum has been observed to result in efficiency of coagulation with certain waters.

Efficiency of coagulation can be increased by close observation of the pH of the water. For North Carolina the optimum pH ranges from 4.5 in the eastern to 5.6 in the central and 6.2 to 6.4 in the western part of the State. Sudden changes, lasting usually for short periods, have required considerable adjustment of the normal optimum pH value at various plants.

Deforestation: Its result and the remedy. Warren E. Hall. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 26-37. (Abstract by J. K. Hoskins.)

The author contends that deforestation is largely responsible for floods, high turbidity of streams, silting of reservoirs, and lower minimum stream flows, resulting in increased costs of surface water storage. The remedy is reforestation. An address of Governor McLean advocating the inauguration of a comprehensive program of stream gauging throughout the State is appended.

Sodium aluminate and its application to North Carolina waters. H. A. Lilly. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 141-144. (Abstract by J. K. Hoskins.)

The composition and reactions of sodium aluminate are explained in this paper and the advantages of its use enumerated, such as low CO_2 content of the treated water, with consequent reduction of corrosion, reduced sulphate hardness, and increased coagulating value over alum.

Water supply in the Borough of Chichester. Anon. *Surveyor*, vol. 71, June 3, 1927, pp. 547-548. (Abstract by J. K. Hoskins.)

A brief description, illustrated, of the improved water works of Chichester is given in this article. The plant consists of a new 12-inch pumping and supply main, triple ram pump, 140-horsepower gas engine, and 2 m. g. reinforced concrete, covered reservoir, 160 feet square, divided into two compartments.

Water supply and purification. Report of committee on water supply and purification presented to public health engineering section of the A. P. H. A., 55th annual meeting, October, 1926. *American Journal of Public Health*, vol. 17, No. 7, July, 1927, pp. 683-687. (Abstract by H. B. Hommon.)

The report of the committee contains brief discussions on: (1) Typhoid fever increase in 1925; (2) constructive efforts to control stream pollution; (3) improvements in water purification practices; (4) iodine treatment of water; (5) outstanding recent construction; and (6) a proposed filtration-plant census in 1927.

Studies of double coagulation at Cincinnati, Ohio. C. Bahlman and E. B. Evans. *Engineering News-Record*, vol. 98, No. 25, June 23, 1927, p. 1028. (Abstract by A. S. Bedell.)

The system for purifying the Ohio River water at Cincinnati is preliminary sedimentation for 72 hours; coagulation with lime and iron sulphate, followed by five to eight hours of sedimentation; mechanical filtration at the rate of 125 m. g. d.; chlorination. During double coagulation experiments, alum, which gave better results than iron sulphate at equal cost, was added at the rate of 0.76 grain per gallon to primary settling tanks, and this reduced the dosage of secondary coagulant 30 per cent. Average cost of chemicals increased from \$2.38 with single coagulation to \$3.24 with double coagulation. Filter service increased 31 per cent with a saving of 18 per cent in wash water. *B. coli* in filter effluent was reduced from 8.30 per 100 c. c. to 1.54 per 100 c. c., while chlorinated water shows reduction from 0.70 per 100 c. c. to 0.12 per 100 c. c. The author believes that for plants using alum as coagulant, the splitting of this into primary and secondary application should entail no additional expense and should result in many benefits. A table is given of the summarized comparison of single and double coagulation.

New 12-m. g. d. water-purification plant for Oakland. Anon. *Engineering News-Record*, vol. 98, No. 21, May 26, 1927, pp. 857-860. (Abstract by A. S. Bedell.)

Special features of the additional 12 m. g. d. water purification plant for Oakland, Calif., are the 105-nozzle aerator, mechanical alum mixers, flexibility in operating basins, large filter units, single filter operating stand, and reclamation of wash water. Mixing is by variable speed motor-operated, stirring mechanisms in four cylindrical tanks 21 feet in diameter and 21 feet deep. Filters operate under 8 to 15 feet head at rate of 110 m. g. d. Air agitation preliminary to water wash of filters is provided largely because of sticky hydrate formed by manganese in raw water. Filters have perforated red brass tube underdrains. Most of the valves are hydraulically operated. Water will be prechlorinated as well as receive final chlorination. The article is well illustrated.

Results of using sodium aluminate with alum in filtration work. Sheppard T. Powell. *Engineering News-Record*, vol. 98, No. 21, May 26, 1927, pp. 871-872. (Abstract by A. S. Bedell.)

Tests have shown that the alum-aluminate process has marked advantage over straight alum treatment with many waters, especially with soft, highly colored waters.

The following comparison of results is made in treating a highly colored soft water:

	Alum	Alum plus 0.25 gr. sodium aluminate
Grains per gallon.....	3.2	1.6
CO ₂	16.0	5.0
pH.....	6.0	7.1
Residual alumina.....	0.4	0.0

Aeration in water purification. W. S. Mahlie. *Water Works*, vol. 66, No. 8, August, 1927, pp. 320-331. (Abstract by W. R. Schreiner.)

A résumé of aeration practice and results as found in the technical literature, together with some experimental data on bacterial removal. At Fort Worth, Tex., 127 daily tests from August, 1922, to January, 1923, showed 35.6 per cent reduction in 37° C. agar counts. Sunlight regarded as most important factor in this reduction.

The decolorization of soft waters. Robert Spurr Weston. *Water Works*, vol. 66 No. 8, August, 1927, pp. 308-311. (Abstract by W. R. Schreiner.)

Various methods of declorizing and their effects are discussed. Storage is effective, but new reservoirs require 6 to 10 years to become stabilized and most effective in color reduction. Lakes having large storage ratios (according to the formula: Storage ratio equals the capacity divided by mean annual run-off) may effect a practically complete color removal. Silver Lake, Mass., storage ratio over 4, receives water from 100 to 196 p. p. m. color, yields water of 9 p. p. m. average. Color reduction for iron-bearing waters is materially increased where at least one semiannual overturn is included in the storage period. Slow sand filtration rarely removes more than 25 per cent unless the method of Clark is used, in which the filters are charged with aluminum hydrate. This method deserves more attention.

For more complete color reduction, coagulation is recommended, with control of pH values, with or without prechlorination, aeration, and storage, as each situation and condition may require. Data are given covering range in chemical dosage, methods, and rates of mixing. Slow stirring is advised. Coagulating basins need frequent sludge removal to prevent resolution of color. No economical methods have been developed for decolorizing waters containing large amounts of sulphite pulp wastes or tarry or saccharine coloring matter. For such waters it is suggested that some sort of biological process is required preliminary to coagulation.

New ideas in filter plant-construction. John L. Porter. *Water Works*, vol. 66, No. 8, August, 1927, pp. 311-313. (Abstract by W. R. Schreiner.)

General description of old plant, softening, coagulating, filtering, and chlorinating 40 m. g. d. of Mississippi River water. Detailed description of new 72 m. g. d. extension begun in 1924. Alluvial soil of New Orleans territory requires careful construction to prevent both vertical and lateral movements of structures. New coagulating basin with baffle two-thirds of length toward outgoing end; chemicals handled by bucket elevators and screw conveyors; chemical dosage to be regulated by Venturi meter and proportional flow diaphragm-controlled apparatus designed by Earl; new baffles to be of wood, because of continual settling of all structures; wash-water pumps in place of elevated tanks; new type of filter underdrain designed by Delery, requiring less headroom and less cost and giving much more uniform wash-water distribution. Attempts to develop a cheap local bank sand by repeated washing showed that a more expensive sand of correct characteristics gave more economical operating conditions. Two new pumps designed by Wood, motor-driven centrifugal type, 30 m. g. d. at 100 pounds pressure or 40 m. g. d. at 75 pounds pressure, to assist original installation of steam-driven pumps.

Iron removal at Champaign, Ill. Frank C. Amsbury, jr. *Water Works*, vol. 66, No. 8, August, 1927, p. 330. (Abstract by W. R. Schreiner.)

The article reports the experiences of the Champaign and Urbana Water Co. with iron removal, beginning in 1911. Aeration followed by filtration failed, because of excessive matting of crenothrix in filter beds. Water jets failed to tear up the growths; steam jets killed the growths but caused complaints of bad tastes and odors. Finally, prechlorination was tried, ending all crenothrix troubles. In 1924 two new filters with newest proved ideas in specifications were built, but it was found necessary to put in air wash to prevent the packing of the beds.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended October 1, 1927

DIPHTHERIA		Cases	INFLUENZA		Cases
Alabama	.....	77	Alabama	.....	7
Arizona	.....	1	Arkansas	.....	43
Arkansas	.....	9	California	.....	12
California	.....	88	Connecticut	.....	1
Colorado	.....	34	Delaware	.....	1
Connecticut	.....	19	Florida	.....	2
Delaware	.....	2	Georgia	.....	33
Florida	.....	6	Illinois	.....	7
Georgia	.....	48	Indiana	.....	8
Idaho	.....	1	Kansas	.....	1
Illinois	.....	100	Louisiana	.....	13
Indiana	.....	29	Maryland ¹	.....	2
Iowa ¹	.....	14	Massachusetts	.....	6
Kansas	.....	51	Michigan	.....	2
Louisiana	.....	37	New Jersey	.....	2
Maine	.....	3	Oklahoma ¹	.....	6
Maryland ¹	.....	29	Oregon	.....	23
Massachusetts	.....	74	South Carolina	.....	216
Michigan	.....	79	Tennessee	.....	6
Minnesota	.....	39	Texas	.....	30
Mississippi	.....	33	Utah ¹	.....	3
Missouri	.....	40	Wisconsin	.....	36
Montana	.....	5			
Nebraska	.....	9			
New Jersey	.....	106			
New Mexico	.....	2			
New York ¹	.....	47			
North Carolina	.....	176			
Oklahoma ¹	.....	63			
Oregon	.....	124			
Pennsylvania	.....	5			
Rhode Island	.....	72			
South Carolina	.....	26			
Tennessee	.....	44			
Texas	.....	9			
Utah ¹	.....	2			
Vermont	.....	13			
Washington	.....	19			
West Virginia	.....	26			
Wisconsin	.....	2			
Wyoming	.....			

¹ Week ended Friday. ² Exclusive of New York City. ³ Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Michigan.....	17
Minnesota.....	4
Missouri.....	3
Montana.....	2
Nebraska.....	1
New Jersey.....	8
New Mexico.....	14
New York ²	50
North Carolina.....	106
Oklahoma ³	13
Oregon.....	2
Pennsylvania.....	96
South Carolina.....	97
Tennessee.....	26
Texas.....	2
Utah ¹	1
Washington.....	19
West Virginia.....	6
Wisconsin.....	62
Wyoming.....	2

MENINGOCOCCUS MENINGITIS	Cases
Arkansas.....	1
California.....	1
Colorado.....	1
Connecticut.....	3
Florida.....	2
Illinois.....	10
Iowa ¹	1
Kansas.....	1
Louisiana.....	1
Maryland ¹	1
Michigan.....	2
Minnesota.....	2
Mississippi.....	1
Missouri.....	1
Montana.....	1
New Jersey.....	1
New York ²	2
North Carolina.....	2
Oklahoma ³	1
Oregon.....	4
Pennsylvania.....	2
Rhode Island.....	1
Texas.....	1
Washington.....	4
Wisconsin.....	2

POLIOMYELITIS	Cases
Arizona.....	1
Arkansas.....	4
California.....	46
Colorado.....	9
Connecticut.....	13
Florida.....	1
Idaho.....	1
Illinois.....	50
Indiana.....	18
Iowa ¹	6
Kansas.....	19
Louisiana.....	3
Maine.....	5
Maryland ¹	3
Massachusetts.....	79
Michigan.....	21

POLIOMYELITIS—continued	Cases
Minnesota.....	15
Missouri.....	20
Nebraska.....	7
New Jersey.....	38
New Mexico.....	9
New York ²	20
North Carolina.....	1
Ohio.....	87
Oklahoma ³	7
Oregon.....	30
Pennsylvania.....	35
Rhode Island.....	1
South Carolina.....	2
South Dakota.....	7
Tennessee.....	3
Texas.....	12
Utah ¹	2
Vermont.....	2
Washington.....	16
West Virginia.....	22
Wisconsin.....	19
Wyoming.....	1

SCARLET FEVER	Cases
Alabama.....	25
Arizona.....	1
Arkansas.....	7
California.....	73
Colorado.....	31
Connecticut.....	22
Florida.....	7
Georgia.....	29
Idaho.....	4
Illinois.....	123
Indiana.....	59
Iowa ¹	20
Kansas.....	64
Louisiana.....	7
Maine.....	16
Maryland ¹	16
Massachusetts.....	129
Michigan.....	100
Minnesota.....	61
Mississippi.....	29
Missouri.....	41
Montana.....	9
Nebraska.....	23
New Jersey.....	51
New Mexico.....	4
New York ²	89
North Carolina.....	76
Oklahoma ³	21
Oregon.....	25
Pennsylvania.....	149
Rhode Island.....	10
South Carolina.....	26
South Dakota.....	18
Tennessee.....	35
Texas.....	19
Utah ¹	2
Vermont.....	6
Washington.....	17
West Virginia.....	50
Wisconsin.....	41
Wyoming.....	9

¹ Week ended Friday. ² Exclusive of New York City. ³ Exclusive of Oklahoma City and Tulsa.

SMALLPOX		TYPHOID FEVER—continued	
	Cases		Cases
California.....	8	Georgia.....	27
Colorado.....	1	Idaho.....	1
Florida.....	1	Illinois.....	49
Illinois.....	5	Indiana.....	21
Indiana.....	5	Iowa ¹	5
Iowa ¹	5	Kansas.....	28
Kansas.....	2	Louisiana.....	13
Louisiana.....	9	Maine.....	6
Michigan.....	7	Maryland ¹	24
Minnesota.....	1	Massachusetts.....	19
Mississippi.....	1	Michigan.....	15
Missouri.....	5	Minnesota.....	9
Montana.....	6	Mississippi.....	9
New Jersey.....	4	Missouri.....	9
New Mexico.....	2	Montana.....	6
New York ¹	6	Nebraska.....	1
North Carolina.....	9	New Jersey.....	10
Oklahoma ²	6	New Mexico.....	15
Oregon.....	24	New York ¹	26
South Carolina.....	2	North Carolina.....	60
Texas.....	4	Oklahoma ²	85
Utah ¹	6	Oregon.....	5
Washington.....	12	Pennsylvania.....	65
West Virginia.....	8	Rhode Island.....	2
Wisconsin.....	7	South Carolina.....	69
		South Dakota.....	3
		Tennessee.....	59
		Texas.....	22
		Utah ¹	4
		Washington.....	16
		West Virginia.....	31
		Wisconsin.....	17

TYPHOID FEVER	
	Cases
Alabama.....	36
Arkansas.....	15
California.....	16
Colorado.....	9
Connecticut.....	5
Florida.....	3

Reports for Week Ended September 24, 1927

DIPHTHERIA		POLIOMYELITIS	
	Cases		Cases
District of Columbia.....	10	Massachusetts.....	97
Massachusetts.....	74	North Dakota.....	3
North Dakota.....	12	Ohio.....	96

INFLUENZA		SCARLET FEVER	
	Cases		Cases
Massachusetts.....	4	District of Columbia.....	8
North Dakota.....	2	Massachusetts.....	130
		North Dakota.....	22

MEASLES		TYPHOID FEVER	
	Cases		Cases
District of Columbia.....	2	District of Columbia.....	2
Massachusetts.....	25	Massachusetts.....	19
North Dakota.....	4	North Dakota.....	2

¹ Week ended Friday.² Exclusive of New York City.³ Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Me- ningo- coccus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Meas- les	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>August, 1927</i>										
Alabama.....	7	105	48	737	138	64	4	71	10	356
Idaho.....	2	7			17		1	16	25	4
Illinois.....	22	325	42	25	128	2	66	314	31	223
Indiana.....	0	74	37		24		11	104	94	70
Maine.....	0	31			13		10	56	0	30
Maryland.....	2	108	21	3	40		1	46	0	209
Mississippi.....		105	881	15,090	471	1,813	8	47	7	280
Missouri.....	6	87	6	15	38		36	93	22	104
Montana.....	3	21	1		10	1	0	159	1	44
New York.....	17	680		23	380		237	382	11	188
North Carolina.....	3	232			705		3	108	34	313
Oklahoma ¹	4	79	34	743	114	65	36	29	48	410
Oregon.....	15	23	22	6	45		31	28	37	21
Pennsylvania.....	6	447			247	3	70	343	1	214
Rhode Island.....	0	34		1	5		8	37	0	19
South Dakota.....	0	13			26		7	28	31	7
Tennessee.....	4	69	21	679	49	122	13	71	25	633
Virginia.....	4	134	692	215	48	47	7	91	16	301
Washington.....	9	71	16		154		10	55	25	35
Wisconsin.....	23	80	42		293		18	199	35	40

¹ Exclusive of Oklahoma City and Tulsa.

<i>August, 1927</i>		<i>August, 1927—Continued</i>	
Anthrax:	Cases	Dysentery—Continued	Cases
Maine.....	1	Oregon.....	1
Missouri.....	1	Tennessee.....	20
Chicken pox:		Virginia.....	532
Alabama.....	7	German measles:	
Idaho.....	7	Illinois.....	4
Illinois.....	188	Maine.....	3
Indiana.....	15	Maryland.....	3
Maine.....	16	New York.....	60
Maryland.....	18	North Carolina.....	26
Mississippi.....	310	Pennsylvania.....	20
Missouri.....	10	Rhode Island.....	1
Montana.....	9	Washington.....	22
New York.....	322	Hookworm disease:	
North Carolina.....	30	Mississippi.....	326
Oklahoma ¹	8	Oklahoma ¹	1
Oregon.....	26	Virginia.....	26
Pennsylvania.....	210	Impetigo contagiosa:	
Rhode Island.....	4	Maryland.....	5
South Dakota.....	3	Oregon.....	12
Tennessee.....	6	Pennsylvania.....	7
Virginia.....	43	Lead poisoning:	
Washington.....	77	Illinois.....	15
Wisconsin.....	78	Leprosy:	
Dengue:		Wisconsin.....	1
Alabama.....	3	Lethargic encephalitis:	
Mississippi.....	44	Alabama.....	1
Dysentery:		Illinois.....	9
Illinois.....	52	Maryland.....	1
Maryland.....	46	Montana.....	1
Mississippi (amebic).....	48	New York.....	18
Mississippi (bacillary).....	863	Pennsylvania.....	3
New York.....	10	Washington.....	2
Oklahoma ¹	56	Wisconsin.....	1

¹ Exclusive of Oklahoma City and Tulsa.

August, 1927—Continued

August, 1927—Continued

Mumps:		Cases	Septic sore throat—Continued		Cases
Alabama	.....	25	Maryland	.....	8
Idaho	.....	26	Missouri	.....	5
Illinois	.....	212	Montana	.....	3
Indiana	.....	9	New York	.....	5
Maine	.....	17	North Carolina	.....	2
Maryland	.....	17	Oregon	.....	6
Mississippi	.....	165	Rhode Island	.....	3
Missouri	.....	47	Tennessee	.....	2
Montana	.....	1	Tetanus:		
New York	.....	389	Illinois	.....	7
Oklahoma ¹	.....	8	Maine	.....	1
Oregon	.....	18	Maryland	.....	3
Pennsylvania	.....	203	Montana	.....	1
Rhode Island	.....	9	New York	.....	12
South Dakota	.....	4	Oklahoma ¹	.....	5
Tennessee	.....	14	Oregon	.....	1
Washington	.....	50	Pennsylvania	.....	7
Wisconsin	.....	104	Trachoma:		
Ophthalmia neonatorum:			Illinois	.....	2
Illinois	.....	64	Mississippi	.....	9
Maryland	.....	2	Missouri	.....	38
Mississippi	.....	15	New York	.....	1
Missouri	.....	1	North Carolina	.....	1
New York	.....	1	Oklahoma ¹	.....	8
North Carolina	.....	1	Pennsylvania	.....	2
Oklahoma ¹	.....	1	Rhode Island	.....	1
Pennsylvania	.....	5	South Dakota	.....	5
Rhode Island	.....	2	Wisconsin	.....	1
Paratyphoid fever:			Trichinosis:		
Illinois	.....	4	Montana	.....	1
Maine	.....	1	Tularaemia:		
New York	.....	5	Idaho	.....	2
Oregon	.....	1	Typhus fever:		
Tennessee	.....	2	Alabama	.....	7
Puerperal fever:			Vincent's angina:		
Illinois	.....	2	Illinois	.....	1
Mississippi	.....	47	Maine	.....	6
New York	.....	6	Maryland	.....	12
Pennsylvania	.....	2	New York	.....	64
Rabies in animals:			Whooping cough:		
Maryland	.....	5	Alabama	.....	114
Mississippi	.....	12	Idaho	.....	56
Missouri	.....	2	Illinois	.....	1,218
New York	.....	9	Indiana	.....	121
Oregon	.....	1	Maine	.....	48
Wisconsin	.....	2	Maryland	.....	218
Rabies in man:			Mississippi	.....	570
Illinois	.....	1	Missouri	.....	183
Maryland	.....	1	Montana	.....	20
Pennsylvania	.....	1	New York	.....	1,210
Tennessee	.....	7	North Carolina	.....	915
Wisconsin	.....	1	Oklahoma ¹	.....	34
Rocky Mountain spotted or tick fever:			Oregon	.....	48
Montana	.....	1	Pennsylvania	.....	730
Scabies:			Rhode Island	.....	21
Oregon	.....	1	South Dakota	.....	58
Pennsylvania	.....	2	Tennessee	.....	69
Septic sore throat:			Virginia	.....	558
Idaho	.....	6	Washington	.....	136
Illinois	.....	3	Wisconsin	.....	450

¹ Exclusive of Oklahoma City and Tulsa.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,050,000. The estimated population of the 91 cities reporting deaths is more than 29,250,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 17, 1927, and September 18, 1926

	1927	1926	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
43 States.....	1,363	1,186	
97 cities.....	579	469	608
Measles:			
42 States.....	627	762	
97 cities.....	114	159	
Poliomyelitis:			
43 States.....	623	123	
Scarlet fever:			
43 States.....	1,286	1,190	
97 cities.....	400	365	359
Smallpox:			
43 States.....	220	98	
97 cities.....	30	13	14
Typhoid fever:			
43 States.....	1,084	1,591	
97 cities.....	194	307	222
<i>Deaths reported</i>			
Influenza and pneumonia:			
91 cities.....	355	311	
Smallpox:			
91 cities.....	0	0	

City reports for week ended September 17, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland.....	75,333	0	0	0	0	0	0	0	1
New Hampshire:									
Concord.....	22,546	0	0	0	0	0	1	0	0
Manchester.....	83,097	0	3	0	0	0	0	0	1
Vermont:									
Barre.....	10,008	0	0	0	0	0	0	0	0
Burlington.....	24,089	0	1	0	0	0	0	0	1

City reports for week ended September 17, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, esti- mated expect- ancy	Cases re- ported	Cases re- ported	Deaths re- ported			
NEW ENGLAND—CON.									
Massachusetts:									
Boston.....	779,620	3	28	15	2	0	11	6	
Fall River.....	128,993	0	2	1	1	0	0	1	
Springfield.....	142,065	1	2	1	0	0	1	1	
Worcester.....	190,757	0	4	0	0	0	0	2	
Rhode Island:									
Pawtucket.....	69,760	0	0	0	0	0	0	0	
Providence.....	267,918	0	3	2	0	0	0	0	
Connecticut:									
Bridgeport.....	(1)	0	5	2	0	0	0	0	
Hartford.....	160,197	0	4	1	1	0	0	2	
New Haven.....	178,927	0	2	1	0	0	0	5	
MIDDLE ATLANTIC									
New York:									
Buffalo.....	538,016	5	13	12		0	4	3	
New York.....	5,873,356	20	85	107	3	5	9	6	
Rochester.....	316,786	0	4	6		0	0	1	
Syracuse.....	182,003	3	4	0		0	0	0	
New Jersey:									
Camden.....	128,642	0	2	8	0	0	0	0	
Newark.....	452,513	3	6	11	1	1	0	5	
Trenton.....	132,020	0	3	1	1	0	0	1	
Pennsylvania:									
Philadelphia.....	1,979,364	18	37	41		1	0	13	
Pittsburgh.....	631,563	7	15	26		2	14	9	
Reading.....	112,707	0	2	2		0	1	0	
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	409,333	2	8	5	0	0	2	0	
Cleveland.....	636,488	5	24	38	2	0	5	21	
Columbus.....	279,836	1	4	2	0	1	0	0	
Toledo.....	287,380	2	9	5	2	2	1	0	
Indiana:									
Fort Wayne.....	97,846	0	2	1	0	0	0	0	
Indianapolis.....	358,819	4	6	2	0	0	0	5	
South Bend.....	80,091	0	1	0	0	0	2	0	
Terre Haute.....	71,071	0	0	1	0	0	0	0	
Illinois:									
Chicago.....	2,995,239	37	55	38	4	0	7	11	
Springfield.....	63,923	0	1	0	0	0	1	1	
Michigan:									
Detroit.....	1,245,824	19	44	27	0	2	2	14	
Flint.....	130,316	0	6	1	0	0	0	1	
Grand Rapids.....	153,098	2	3	0	0	0	1	0	
Wisconsin:									
Kenosha.....	50,891	1	1	0	0	0	0	2	
Madison.....	46,385	2	1	1	0	0	1	0	
Milwaukee.....	509,192	10	9	5	0	0	6	7	
Racine.....	67,797	2	1	3	0	0	1	0	
Superior.....	39,671	0	1	0	0	0	0	0	
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	110,562	0	1	0	0	0	0	0	
Minneapolis.....	425,435	10	19	17	0	0	3	2	
St. Paul.....	246,001	1	13	3	0	2	1	6	
Iowa:									
Davenport.....	52,469	0	0	0	0		0	0	
Sioux City.....	76,411		1						
Waterloo.....	36,771	0	0	1	0		1	0	
Missouri:									
Kansas City.....	367,481	0	4	4	0	0	2	2	
St. Joseph.....	78,342	0	1	0	0	0	1	0	
St. Louis.....	821,543	1	23	22	0	0	2	3	
North Dakota:									
Fargo.....	26,403	0	1	0	0	0	0	1	
Grand Forks.....	14,811	0	1	0	0		0	0	

1 No estimate made.

City reports for week ended September 17, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chick- en pox, cases re-ported	Diphtheria		Influenza		Meas- les, cases re-ported	Mumps, cases re-ported	Pneu- monia, deaths re-ported
			Cases, esti- mated expect- ancy	Cases re-ported	Cases re-ported	Deaths re-ported			
WEST NORTH CENTRAL— continued									
South Dakota:									
Aberdeen.....	15,036	0	0	0	0	-----	1	0	-----
Sioux Falls.....	30,127	0	0	0	0	-----	0	0	-----
Nebraska:									
Lincoln.....	60,941	2	1	0	0	0	1	2	0
Omaha.....	211,768	2	12	3	0	0	0	1	4
Kansas:									
Topeka.....	55,411	1	1	11	0	0	3	0	0
Wichita.....	88,367	0	2	2	0	0	0	1	0
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	122,049	0	1	1	0	0	0	0	2
Maryland:									
Baltimore.....	796,296	8	17	19	0	1	1	4	15
Cumberland.....	33,741	1	1	0	0	0	0	0	0
Frederick.....	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington.....	497,506	0	6	15	0	0	1	0	6
Virginia:									
Lynchburg.....	30,395	0	1	1	0	0	0	0	0
Norfolk.....	(1)	0	2	0	0	0	0	0	3
Richmond.....	186,403	0	13	1	0	2	1	0	0
Roanoke.....	58,208	0	4	2	0	0	0	0	0
West Virginia:									
Charleston.....	49,019	0	2	0	0	1	0	0	0
Wheeling.....	56,208	3	1	1	0	0	1	1	1
North Carolina:									
Raleigh.....	30,371	0	3	0	0	0	0	0	2
Wilmington.....	37,061	0	2	0	0	0	0	0	1
Winston-Salem.....	69,031	1	2	4	0	0	2	30	0
South Carolina:									
Charleston.....	73,125	0	1	2	13	0	0	0	1
Columbia.....	41,225	0	1	2	0	0	1	0	1
Greenville.....	27,311	0	2	0	0	0	0	0	0
Georgia:									
Atlanta.....	(1)	0	6	11	8	1	0	1	7
Brunswick.....	16,809	0	0	0	0	0	0	0	0
Savannah.....	93,134	0	1	2	1	0	1	0	3
Florida:									
Miami.....	69,754	0	-----	1	0	0	0	9	1
St. Petersburg.....	26,847	0	0	-----	0	0	0	-----	0
Tampa.....	94,743	0	0	1	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington.....	58,309	-----	0	-----	-----	-----	-----	-----	-----
Lexington.....	46,895	0	-----	0	0	0	1	0	1
Louisville.....	305,935	0	5	3	1	0	1	1	8
Tennessee:									
Memphis.....	174,533	0	4	1	0	0	0	0	6
Nashville.....	136,220	3	3	4	0	0	1	0	3
Alabama:									
Birmingham.....	205,670	2	5	11	2	0	0	0	1
Mobile.....	65,955	0	1	1	0	0	0	0	0
Montgomery.....	46,481	1	2	3	0	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith.....	31,643	0	0	0	0	-----	0	0	-----
Little Rock.....	74,216	0	1	0	0	0	2	0	0
Louisiana:									
New Orleans.....	414,493	0	6	6	2	1	0	0	6
Shreveport.....	57,857	1	1	2	0	0	0	0	1
Oklahoma:									
Oklahoma City.....	(1)	0	2	3	0	0	0	0	1
Texas:									
Dallas.....	194,450	0	4	14	1	-----	2	0	-----
Galveston.....	48,375	0	0	1	0	0	0	0	2
Houston.....	164,954	0	2	2	0	0	0	0	2
San Antonio.....	198,069	0	1	8	0	1	0	0	3

1 No estimate made.

City reports for week ended September 17, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN									
Montana:									
Billings.....	17,971	1	0	0	0	0	0	0	0
Great Falls.....	29,883	0	0	0	0	0	1	0	0
Helena.....	12,037	0	0	0	0	0	1	0	1
Missoula.....	12,668	0	0	0	0	0	0	0	0
Idaho:									
Boise.....	23,042	0	0	0	0	0	0	2	0
Colorado:									
Denver.....	280,911	1	12	21	1	2	1	5	5
Pueblo.....	43,787	0	3	0	0	1	0	1	1
New Mexico:									
Albuquerque.....	21,000	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City.....	130,948	10	3	4	0	0	0	1	4
Nevada:									
Reno.....	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle.....	(1)	2	4	6	0	5	3	0	0
Spokane.....	108,867	3	2	0	0	0	0	0	0
Tacoma.....	104,455	0	3	3	0	0	0	0	3
Oregon:									
Portland.....	282,383	1	5	2	0	1	0	0	3
California:									
Los Angeles.....	(1)	27	0	0	0	0	0	0	0
Sacramento.....	72,260	1	2	0	0	0	0	0	0
San Francisco.....	557,539	33	14	4	1	1	9	6	5

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland.....	1	0	0	0	0	0	1	1	0	1	16
New Hampshire:											
Concord.....	0	0	0	0	0	0	0	0	0	0	3
Manchester.....	0	0	0	0	0	1	0	0	0	0	15
Vermont:											
Barre.....	0	1	0	0	0	1	0	0	0	1	1
Burlington.....	0	0	0	0	0	0	0	0	0	0	6
Massachusetts:											
Boston.....	16	25	0	0	0	10	4	8	0	22	175
Fall River.....	1	1	0	0	0	2	2	3	0	2	2
Springfield.....	2	0	0	0	0	0	1	0	0	5	27
Worcester.....	3	3	0	0	0	3	1	0	0	4	32
Rhode Island:											
Pawtucket.....	0	0	0	0	0	0	0	0	0	0	5
Providence.....	2	11	0	0	0	3	2	4	0	3	53
Connecticut:											
Bridgeport.....	2	1	0	0	0	0	0	1	1	0	29
Hartford.....	2	1	0	0	0	6	2	1	0	15	37
New Haven.....	2	1	0	0	0	0	2	2	0	8	29
MIDDLE ATLANTIC											
New York:											
Buffalo.....	6	11	0	0	0	7	2	3	0	12	101
New York.....	34	35	0	0	0	83	45	54	4	143	2,200
Rochester.....	2	1	0	0	0	3	1	0	0	3	66
Syracuse.....	3	3	0	0	0	1	2	0	0	2	34

¹ No estimate made.² Pulmonary tuberculosis only.

Division, State, and city	Scarlet fever		Smallpox			Typhoid fever				Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported	Tuberculosis, deaths reported	Cases, estimated expectancy	Cases reported	Deaths reported		
MIDDLE ATLANTIC—continued											
New Jersey:											
Camden.....	2	0	0	0	0	1	1	1	0	1	29
Newark.....	5	4	0	0	0	8	2	1	0	53	91
Trenton.....	0	2	0	0	0	4	1	1	0	0	45
Pennsylvania:											
Philadelphia.....	23	26	0	0	0	25	14	10	0	31	372
Pittsburgh.....	15	10	0	0	0	10	4	4	0	31	134
Reading.....	1	0	0	0	0	1	1	1	0	1	25
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	5	4	0	0	0	13	2	5	1	3	118
Cleveland.....	12	14	0	0	0	14	5	4	0	37	160
Columbus.....	4	5	0	0	0	4	1	0	0	3	83
Toledo.....	5	6	0	0	0	8	3	0	0	8	80
Indiana:											
Fort Wayne.....	1	0	0	0	0	0	1	0	0	0	13
Indianapolis.....	3	8	0	0	0	4	3	1	0	16	101
South Bend.....	2	0	0	0	0	2	0	2	0	1	19
Terre Haute.....	1	1	0	0	0	0	0	0	0	0	17
Illinois:											
Chicago.....	34	29	1	0	0	42	9	5	0	163	645
Springfield.....	1	0	0	0	0	0	1	2	0	0	15
Michigan:											
Detroit.....	30	38	1	0	0	15	6	4	1	87	239
Flint.....	5	15	0	0	0	3	1	0	0	2	31
Grand Rapids.....	3	1	0	0	0	0	0	1	0	2	35
Wisconsin:											
Kenosha.....	0	3	0	0	0	1	0	0	0	1	5
Madison.....	1	9	0	0	0	0	0	0	0	7	—
Milwaukee.....	12	10	0	0	0	9	0	0	0	34	100
Racine.....	2	5	0	0	0	1	0	0	0	43	11
Superior.....	1	1	1	0	0	0	0	0	0	0	9
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	4	1	0	0	0	0	1	0	0	4	21
Minneapolis.....	19	15	0	0	0	3	2	2	0	0	78
St. Paul.....	7	6	1	0	0	4	2	1	0	11	61
Iowa:											
Davenport.....	0	0	0	0	—	—	0	0	—	4	—
Sioux City.....	1	—	0	—	—	—	0	—	—	0	—
Waterloo.....	1	0	0	0	—	—	0	0	—	0	—
Missouri:											
Kansas City.....	3	1	0	0	0	3	2	1	0	7	101
St. Joseph.....	0	0	0	11	0	0	0	0	0	1	35
St. Louis.....	11	10	0	0	0	11	7	7	0	22	214
North Dakota:											
Fargo.....	1	2	0	0	0	0	0	1	0	0	4
Grand Forks.....	1	0	0	0	—	—	0	0	—	0	—
South Dakota:											
Aberdeen.....	2	0	0	0	—	—	0	0	—	1	—
Sioux Falls.....	0	1	0	0	—	—	0	0	—	0	—
Nebraska:											
Lincoln.....	1	2	0	0	0	0	0	6	0	0	14

City reports for week ended September 17, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
SOUTH ATLANTIC— continued											
District of Colum- bia:											
Washington.....	5	7	1	0	0	11	4	1	0	3	119
Virginia:											
Lynchburg.....	0	0	0	0	0	0	1	0	1	0	10
Norfolk.....	1	2	0	0	0	2	1	0	0	5	
Richmond.....	5	4	0	0	0	2	2	0	0	0	43
Roanoke.....	1	2	0	0	0	1	2	0	0	0	19
West Virginia:											
Charleston.....	1	1	0	0	0	2	2	2	0	0	24
Wheeling.....	2	1	0	0	0	1	1	2	0	2	17
North Carolina:											
Raleigh.....	0	0	0	0	0	0	1	0	0	0	8
Wilmington.....	0	0	0	0	0	2	1	0	0	0	16
Winston-Salem.....	1	5	1	0	0	1	2	0	0	4	18
South Carolina:											
Charleston.....	0	0	0	1	0	4	3	6	1	0	19
Columbia.....	0	0	0	0			1	0		1	13
Greenville.....	0	0	0	0	0	0	1	0	0	0	7
Georgia:											
Atlanta.....	4	10	0	1	0	2	4	0	0	1	76
Brunswick.....	0	0	0				0				
Savannah.....	0	0	0	0	0	1	1	1	0	0	26
Florida:											
Miami.....		0		0	0	1		1	1	0	24
St. Petersburg.....	0		0		0	0	0		0		7
Tampa.....	0	2	0	0	0	3	0	0	0	2	30
EAST SOUTH CENTRAL											
Kentucky:											
Covington.....	0		0				1				
Lexington.....		1		0	0			0	0	5	17
Louisville.....	2	2	0	0	0	5	5	4	0	0	65
Tennessee:											
Memphis.....	1	3	0	0	0	3	5	8	0	0	78
Nashville.....	3	0	1	0	0	2	5	13	1	2	42
Alabama:											
Birmingham.....	4	4	0	0	0	4	5	3	1	1	63
Mobile.....	0	0	0	0	0	1	0	0	0	0	19
Montgomery.....	0	0	0	0	0	0	1	2	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith.....	1	0	0	0			0	2		0	
Little Rock.....	1	3	0	0	0	2	2	0	0	0	
Louisiana:											
New Orleans.....	2	0	0	0	0	16	4	4	0	5	154
Shreveport.....	1	1	0	0	0	1	2	0	0	1	26
Oklahoma:											
Oklahoma City.....	2	2	0	1	0	1	2	0	1	0	31
Texas:											
Dallas.....	2	3	1	1			2	2		9	
Galveston.....	0	0	0	0	0	0	0	0	0	0	16
Houston.....	0	2	0	0	0	3	1	1	1	0	47
San Antonio.....	0	1	0	0	0	2	0	0	0	0	35
MOUNTAIN											
Montana:											
Billings.....	1	0	0	0	0	0	1	0	0	1	4
Great Falls.....	1	0	1	1	0	0	1	0	0	0	4
Helena.....	0	0	0	0	0	0	0	0	0	0	3
Missoula.....	0	0	0	0	0	0	0	1	0	0	6
Idaho:											
Boise.....	0	0	0	0	0	0	1	0	0	0	3
Colorado:											
Denver.....	4	5	1	1	0	6	3	0	1	1	71
Pueblo.....	1	0	0	0	0	0	1	1	0	0	9

City reports for week ended September 17, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Typhoid fever				Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, estimated expect- ancy	Cases re- ported	Cases, estimated expect- ancy	Cases re- ported	Deaths re- ported	Tuber- culosis, deaths re- ported	Cases, estimated expect- ancy	Cases re- ported	Deaths re- ported		
MOUNTAIN—CON.											
New Mexico:											
Albuquerque..	0	0	0	0	0	5	2	1	0	0	14
Utah:											
Salt Lake City.	1	6	0	1	0	1	2	2	0	2	25
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	2
PACIFIC											
Washington:											
Seattle.....	6	0	1	0			2	0		3	
Spokane.....	4	2	1	9			1	0		2	
Tacoma.....	2	0	1	2	0	1	0	2	0	0	18
Oregon:											
Portland.....	4	3	2	8	0	3	3	0	0	0	47
California:											
Los Angeles...	8		2				5				
Sacramento...	1	0	0	2	0	1	1	0	0	0	12
San Francisco..	6	9	1	0	0	7	1	1	0	6	128

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland.....	0	0	0	1	0	0	0	5	0
Massachusetts:									
Boston.....	1	3	2	1	1	0	2	36	5
Fall River.....	0	0	0	0	0	0	0	1	0
Springfield.....	0	0	1	1	0	0	0	1	0
Worcester.....	0	0	0	0	0	0	0	2	1
Rhode Island:									
Providence.....	0	0	0	0	0	0	0	1	0
Connecticut:									
Bridgeport.....	0	0	0	0	0	0	0	1	0
Hartford.....	0	0	0	0	0	0	0	2	0
New Haven.....	0	0	0	0	0	0	1	2	0
MIDDLE ATLANTIC									
New York:									
Buffalo.....	0	0	0	0	0	0	1	0	1
New York ¹	5	2	2	2	0	0	11	53	8
New Jersey:									
Newark.....	1	0	1	0	0	0	0	6	0
Trenton.....	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia.....	1	0	0	1	0	0	1	0	0
Pittsburgh.....	0	0	0	0	0	0	1	2	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	0	0	0	0	0	0	1	1	0
Cleveland.....	1	0	0	0	0	0	1	8	0
Columbus.....	0	0	0	0	0	0	0	1	0
Toledo.....	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago.....	2	0	0	0	1	1	4	13	1
Michigan:									
Detroit.....	0	0	0	0	0	0	1	4	0
Flint.....	0	0	0	0	0	0	1	3	0
Wisconsin:									
Madison.....	0	0	0	0	0	0	0	4	0
Milwaukee.....	1	0	1	0	0	0	0	4	1

¹ Rabies (human): 1 death at New York, N. Y.

City reports for week ended September 17, 1927—Continued

Division, State, and city	Meningo- coccus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infan- tile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis.....	1	0	1	1	0	0	1	1	0
St. Paul.....	0	0	0	0	0	0	1	1	0
Missouri:									
Kansas City.....	0	0	0	0	0	0	1	6	0
St. Louis.....	1	1	0	0	0	0	1	1	0
Nebraska:									
Lincoln.....	0	0	0	0	0	0	0	1	0
Omaha.....	0	0	0	0	0	0	0	2	1
Kansas:									
Topeka.....	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC¹									
Maryland:									
Baltimore.....	1	0	0	1	0	0	2	0	0
West Virginia:									
Charleston.....	0	1	0	0	0	0	0	1	1
Wheeling.....	0	0	1	1	0	0	0	2	0
South Carolina:									
Charleston ²	0	0	0	1	4	0	0	0	0
Columbia.....	0	0	0	0	0	1	0	0	0
Georgia:									
Savannah ²	0	0	0	0	1	0	0	0	0
Florida:									
Miami.....	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Lexington.....	0	0	0	0	0	0	0	1	1
Louisville.....	0	0	0	0	0	0	0	1	0
Tennessee:									
Memphis.....	0	0	0	0	1	1	0	0	0
Nashville.....	0	0	0	0	0	0	0	2	0
Alabama:									
Birmingham.....	0	0	0	0	1	0	0	1	0
Mobile ²	0	0	0	0	0	2	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock.....	0	0	0	0	0	7	0	0	0
Louisiana:									
New Orleans.....	0	0	1	0	0	0	0	1	0
Shreveport.....	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City.....	0	0	0	0	0	0	0	2	1
Texas:									
Dallas.....	0	0	0	0	2	0	0	5	0
MOUNTAIN									
Montana:									
Missoula.....	3	1	0	0	0	0	0	0	0
New Mexico:									
Albuquerque.....	0	0	0	0	0	0	0	4	0
Utah:									
Salt Lake City.....	0	0	0	0	0	0	1	4	0
Nevada:									
Reno.....	0	0	0	0	0	0	0	2	0
PACIFIC									
Washington:									
Seattle.....	1	0	0	0	0	0	0	2	0
Spokane.....	1	0	0	0	0	0	1	0	0
Tacoma.....	0	0	0	0	0	0	0	7	0
Oregon:									
Portland.....	1	0	0	0	0	0	0	1	0
California:									
San Francisco.....	1	0	0	0	0	0	0	3	0
San Francisco.....	0	0	1	0	0	0	0	8	1

¹ Typhus fever; 1 death at Lynchburg, Va., 1 case at Savannah, Ga., 2 cases and 1 death at Mobile, Ala., and 1 case at Houston, Tex.

² Dengue: 1 case at Charleston, S. C.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended September 17, 1927, compared with those for a like period ended September 18, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, August 14 to September 17, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926¹

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities.....	68	80	65	81	73	² 84	75	³ 92	84	⁴ 100
New England.....	47	111	50	86	26	88	38	93	35	53
Middle Atlantic.....	59	94	56	78	59	77	53	90	63	106
East North Central.....	87	85	76	81	99	87	78	90	95	82
West North Central.....	83	44	81	54	67	69	73	64	95	⁵ 129
South Atlantic.....	60	62	61	89	69	² 89	136	109	110	⁶ 113
East South Central.....	21	51	57	61	41	51	103	107	109	⁷ 124
West South Central.....	64	75	34	96	60	164	86	⁸ 91	77	138
Mountain.....	146	54	73	135	91	117	173	153	237	225
Pacific.....	62	60	91	94	134	73	91	⁹ 89	99	¹⁰ 55

MEASLES CASE RATES

	44	32	30	25	25	² 21	27	³ 19	28	⁴ 26
101 cities.....	44	32	30	25	25	² 21	27	³ 19	28	⁴ 26
New England.....	52	84	38	58	33	58	35	63	19	30
Middle Atlantic.....	27	35	15	24	17	18	11	16	10	14
East North Central.....	72	13	43	13	31	11	20	15	23	18
West North Central.....	28	22	20	16	10	16	10	10	12	⁵ 27
South Atlantic.....	35	27	15	31	9	³ 18	19	14	9	⁶ 15
East South Central.....	36	5	36	25	31	10	16	10	16	⁷ 11
West South Central.....	9	42	4	17	0	42	4	⁸ 10	4	17
Mountain.....	18	18	27	27	36	9	100	36	73	45
Pacific.....	78	71	94	52	91	42	158	⁹ 33	212	¹⁰ 59

SCARLET FEVER CASE RATES

	48	50	55	54	51	² 57	58	³ 52	65	⁴ 69
101 cities.....	48	50	55	54	51	² 57	58	³ 52	65	⁴ 69
New England.....	73	51	54	81	59	62	80	53	75	102
Middle Atlantic.....	29	31	32	38	25	38	32	30	44	46
East North Central.....	46	78	55	61	58	89	61	65	60	89
West North Central.....	119	64	133	62	131	69	93	91	129	⁵ 90
South Atlantic.....	39	42	58	63	37	² 60	56	60	48	⁶ 78
East South Central.....	36	20	62	87	57	76	109	97	119	⁷ 49
West South Central.....	17	50	28	59	28	59	47	⁸ 40	30	42
Mountain.....	38	81	64	63	82	63	73	54	82	99
Pacific.....	78	42	75	37	70	34	88	⁹ 33	118	¹⁰ 46

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.

² Greenville, S. C., not included.

³ Dallas, Tex., and Tacoma, Wash., not included.

⁴ Sioux City, Iowa, Brunswick, Ga., Covington, Ky., and Los Angeles, Calif., not included.

⁵ Sioux City, Iowa, not included.

⁶ Brunswick, Ga., not included.

⁷ Covington, Ky., not included.

⁸ Dallas, Tex., not included.

⁹ Tacoma, Wash., not included.

¹⁰ Los Angeles, Calif., not included.

Summary of weekly reports from cities, August 14 to September 17, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities.....	2	5	4	5	2	4	2	3	2	5
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	1	0	0	0	0	0	0	0	0	0
East North Central.....	2	7	7	6	0	7	2	3	0	0
West North Central.....	4	10	0	4	0	2	2	12	0	23
South Atlantic.....	6	4	9	0	9	10	2	2	9	4
East South Central.....	5	25	0	25	10	0	0	10	0	10
West South Central.....	0	4	9	0	4	0	0	10	4	4
Mountain.....	0	18	0	27	0	36	0	9	0	27
Pacific.....	5	13	13	31	13	18	16	14	19	55

TYPHOID FEVER CASE RATES

101 cities.....	41	37	40	31	40	32	45	29	53	34
New England.....	17	30	19	33	12	21	17	39	33	46
Middle Atlantic.....	34	20	39	21	34	28	34	27	55	37
East North Central.....	17	19	20	11	20	15	20	7	29	16
West North Central.....	48	38	42	20	42	10	50	32	26	25
South Atlantic.....	93	82	56	58	91	71	104	58	80	31
East South Central.....	186	219	233	204	176	183	284	112	248	162
West South Central.....	43	80	39	75	43	55	39	56	69	38
Mountain.....	73	27	18	45	9	54	18	63	82	36
Pacific.....	24	31	38	21	46	8	27	8	35	13

INFLUENZA DEATH RATES

95 cities.....	3	4	3	5	3	4	4	5	4	14
New England.....	0	2	0	2	0	2	0	5	0	0
Middle Atlantic.....	1	2	3	2	2	3	4	3	3	4
East North Central.....	3	2	3	3	4	5	4	4	3	2
West North Central.....	2	0	8	2	4	4	0	0	4	4
South Atlantic.....	2	6	2	11	0	17	0	6	6	9
East South Central.....	0	10	0	15	16	5	0	10	5	10
West South Central.....	26	30	4	22	9	13	18	16	22	10
Mountain.....	0	0	18	9	9	18	36	9	0	9
Pacific.....	7	0	0	7	0	0	0	7	7	7

PNEUMONIA DEATH RATES

95 cities.....	54	45	47	46	51	56	51	62	53	59
New England.....	40	49	33	51	50	49	40	65	54	39
Middle Atlantic.....	58	47	56	55	59	72	65	67	51	60
East North Central.....	35	35	37	34	34	51	37	50	40	53
West North Central.....	49	25	42	31	36	23	30	44	51	46
South Atlantic.....	87	53	50	37	64	42	44	50	53	78
East South Central.....	36	66	47	66	52	46	41	112	82	97
West South Central.....	66	69	71	65	49	82	97	63	115	73
Mountain.....	82	36	73	36	64	54	64	90	118	90
Pacific.....	78	72	21	62	78	55	57	48	53	55

¹ Greenville, S. C., not included.

² Dallas, Tex., and Tacoma, Wash., not included.

³ Sioux City, Iowa, Brunswick, Ga., Covington, Ky., and Los Angeles, Calif., not included.

⁴ Sioux City, Iowa, not included.

⁵ Brunswick, Ga., not included.

⁶ Covington, Ky., not included.

⁷ Dallas, Tex., not included.

⁸ Tacoma, Wash., not included.

⁹ Los Angeles, Calif., not included.

¹⁰ Brunswick, Ga., Covington, Ky., Dallas, Tex., and Los Angeles, Calif., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total.....	101	95	30,443,800	30,966,700	29,783,700	30,295,500
New England.....	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic.....	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central.....	16	16	7,680,200	7,810,600	7,680,200	7,810,600
West North Central.....	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic.....	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central.....	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central.....	8	7	1,213,800	1,243,800	1,181,500	1,210,400
Mountain.....	9	9	572,100	580,000	572,100	580,000
Pacific.....	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended September 10, 1927.—The following report for the week ended September 10, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Small-pox		Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Madagascar: Tamatave.....	0	0	0	0	5	---	French Indo-China:						
Iraq: Basra.....	0	0	13	11	3	3	Turane.....	0	0	10	4	0	0
British India:							Macao.....	0	0	---	1	0	0
Bombay.....	---	1	---	1	3	2	China:						
Madras.....	---	0	---	11	0	0	Amoy.....	0	0	21	---	0	0
Calcutta.....	---	0	---	13	6	5	Shanghai.....	0	0	---	20	0	0
Bassein.....	---	2	---	0	0	0	Canton.....	0	0	17	10	0	0
Rangoon.....	---	2	---	0	0	0	Kwantung:						
Siam: Bangkok.....	0	0	1	0	0	0	Dairen.....	0	0	1	0	0	0
Dutch East Indies:													
Banjermasin.....	0	0	0	0	25	3							
Surabaya.....	0	0	0	0	3	0							

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Aden, Perim.
Arabia.—Bahrein.
Persia.—Bender-Abbas, Bushire, Lingah.
India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Vizagapatam, Moulmein.
Ceylon.—Colombo.
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Penang, Singapore.
Dutch East Indies.—Batavia, Pontianak, Semarang, Cheribon, Balikpapan, Padang, Belawan-Deli, Tarakan, Palembang, Samarinda, Menado, Makassar, Sabang.
Surawak.—Kuching.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.
French Indo-China.—Saigon and Cholon, Haiphong.
China.—Tientsin, Tsingtao.
Hong Kong.

Wei-hai-wei.
Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.
Kwantung.—Port Arthur.
Japan.—Nagasaki, Yokohama, Niigata, Shimomoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Western Samoa.—Apia.
New Caledonia.—Noumea.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massawa.
French Somaliland.—Djibuti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—St. Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Aden Protectorate.—Kamaran.

Persia.—Mohammera.

Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended August 28: *Pondicherry* and *Karikal*, nil.

Week ended September 3: *Pondicherry* and *Karikal*, nil.

Movement of infected ships

Singapore.—The pilgrim ship *Tengistan* arrived September 13 from Jeddah infected with smallpox.

ANGOLA

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in Angola, according to regional divisions, as follows:

Disease	Coast districts	Interior	Land frontier	Total
<i>Ancylostomiasis</i>	7	1	56	64
<i>Beriberi</i>	10			10
<i>Dysentery</i>	24	10	5	39
<i>Filariasis</i>	3			3
<i>Influenza</i>	327	204	97	628
<i>Leprosy</i>	1		2	3
<i>Malaria</i>	473	135	216	824
<i>Measles</i>	1			1
<i>Mumps</i>	14			14
<i>Pneumonia</i>	35	16	10	61
<i>Puerperal fever</i>	1			1
<i>Recurrent fever</i>				1
<i>Smallpox</i>	4		9	13
<i>Tetanus</i>		1		1
<i>Trypanosomiasis</i>	45	15	27	87
<i>Tuberculosis</i>	16	5	4	25
<i>Typhoid fever</i>	2			2
<i>Whooping cough</i>	6			6
<i>Yaws</i>	84	16	62	162

CANADA

Communicable diseases—Week ended September 17, 1927.—The Canadian ministry of health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended September 17, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario ¹	Manitoba	Saskatchewan	Alberta	Total
<i>Influenza</i>	8			1		11		20
<i>Polio-myelitis</i>				5		1		6
<i>Smallpox</i>	1			13	7			21
<i>Typhoid fever</i>		2	20	29	2	2	6	62

¹ Late reports for week ended September 3, 1927: Cerebrospinal fever, 2; smallpox, 11; typhoid fever, 14. For week ended September 10: Polio-myelitis, 3; smallpox, 17; typhoid fever, 6.

Communicable diseases—Quebec—Week ended September 17, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended September 17, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	2	Scarlet fever.....	37
Diphtheria.....	40	Tuberculosis.....	33
Influenza.....	1	Typhoid fever.....	20
Measles.....	9	Whooping cough.....	32

Further relative to poliomyelitis—British Columbia.—Information received under date of September 16, 1927, shows poliomyelitis present in epidemic form in the Okanagan Valley, the city of Kelowna reporting several cases of mild type. It was stated that schools and theaters had been closed. In the Kootenay district, where the disease first appeared, September 15, there were reported four cases at Rossland, one case at Slocan City, and one case at Trail, where a total of 16 cases with three deaths had been reported. At Vancouver two cases with one fatality were reported during the month of September, 1927.

Typhoid fever—Montreal—January 2–September 24, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927.....	3	1	May 21, 1927.....	770	26
Jan. 15, 1927.....	4	3	May 28, 1927.....	353	38
Jan. 22, 1927.....	1	1	June 4, 1927.....	239	37
Jan. 29, 1927.....	3	1	June 11, 1927.....	128	36
Feb. 5, 1927.....	1	0	June 18, 1927.....	86	—
Feb. 12, 1927.....	0	0	June 25, 1927.....	75	23
Feb. 19, 1927.....	1	2	July 2, 1927.....	66	21
Feb. 26, 1927.....	1	1	July 9, 1927.....	52	10
Mar. 5, 1927.....	9	1	July 16, 1927.....	39	4
Mar. 12, 1927.....	203	4	July 23, 1927.....	22	9
Mar. 19, 1927.....	383	14	July 30, 1927.....	23	10
Mar. 26, 1927.....	568	22	Aug. 6, 1927.....	16	5
Apr. 2, 1927.....	649	48	Aug. 13, 1927.....	20	5
Apr. 9, 1927.....	386	40	Aug. 20, 1927.....	14	4
Apr. 16, 1927.....	175	38	Aug. 27, 1927.....	8	3
Apr. 23, 1927.....	125	43	Sept. 3, 1927.....	27	—
Apr. 30, 1927.....	105	23	Sept. 10, 1927.....	17	—
May 7, 1927.....	106	19	Sept. 17, 1927.....	13	2
May 14, 1927.....	367	16	Sept. 24, 1927.....	6	3

ESTONIA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	1	Scarlet fever.....	250
Diphtheria.....	31	Tuberculosis.....	97
Measles.....	98	Typhoid fever.....	33

Population, 1,114, 630.

LATVIA

Communicable diseases—July, 1927.—Communicable diseases were reported in the Republic of Latvia during the month of July, 1927, as follows:

Disease	Cases	Disease	Cases
Anthrax.....	1	Poliomyelitis.....	1
Cerebrospinal meningitis.....	6	Puerperal fever.....	2
Diphtheria.....	19	Rabies.....	1
Dysentery.....	3	Scarlet fever.....	86
Erysipelas.....	13	Tetanus.....	2
Influenza.....	2	Trachoma.....	12
Leprosy.....	1	Typhoid fever.....	74
Measles.....	334	Typhus fever.....	6
Paratyphoid fever.....	2	Whooping cough.....	82

Population, estimated, 1,950,000.

MEXICO

Typhoid fever—Nogales—August 22–September 23, 1927.—During the period August 22 to September 23, 1927, typhoid fever was reported prevalent at Nogales, State of Sonora, Mexico, with an unreported number of cases and with several fatalities. The outbreak was attributed to the water supply.

SENEGAL

Plague—Yellow fever—August 29–September 11, 1927.—During the two weeks ended September 11, 1927, plague was reported in Senegal as follows: Dakar—cases 14, deaths, 8; Rufisque and suburbs—cases 13, deaths, 10. In the interior of the country, in the district of Baol, plague was reported during the two weeks with 32 cases and 11 deaths, and in the district of Cayor 184 cases with 85 deaths. At the interior town of Thies, two fatal cases were reported.

Yellow fever.—During the same two-week period 2 fatal cases of yellow fever were reported on the Island of Goree, vicinity of Dakar. During the week ended September 4, 1 fatal case (European) was reported at Tiaroye, and at Thies 2 suspect deaths were reported. During the week ended September 11, 1 case (European) at Tivaouane and 1 suspect death (Syrian) at Thieppe were reported.

VIRGIN ISLANDS

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were notified in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks	Island and disease	Cases	Remarks
St. Thomas and St. John:			St. Croix:		
Gonorrhea.....	5		Gonococcus infection.....	1	
Syphilis.....	5	1 imported; 3 secondary.	Pellagra.....	1	
Tuberculosis.....	1	Chronic pulmonary.	Syphilis.....	9	Secondary.
			Uncinariasis.....	13	

YUGOSLAVIA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	208	32	Scarlet fever.....	522	77
Cerebrospinal meningitis.....	7	5	Tetanus.....	29	13
Diphtheria.....	189	30	Typhoid fever.....	697	59
Dysentery.....	571	65	Typhus fever.....	9	1
Measles.....	159	1	Whooping cough ¹	130	2

¹ Reports from Aug. 1 to 14 only.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended October 7, 1927¹

CHOLERA

Place	Date	Cases	Deaths	Remarks
India:				
Bombay.....	Aug. 7-13.....	12	11	
Calcutta.....	Aug. 7-20.....	53	25	
Madras.....	Aug. 21-27.....	82	53	
Rangoon.....	Aug. 7-13.....	1	1	
Siam.....				July 31-Aug. 13, 1927: Cases, 17; deaths, 15. Apr. 1-Aug. 13, 1927: Cases, 656; deaths, 456.
Bangkok.....	Aug. 7-13.....	1		District.

PLAGUE

Algeria:				
Oran.....	Sept. 1-10.....	1	1	Old case. Entered hospital Aug. 21-31, 1927; died Sept. 5, 1927.
India:				
Bombay.....	Aug. 7-13.....	3	3	
Madras Presidency.....	July 31-Aug. 6.....	149	58	
Rangoon.....	Aug. 7-20.....	6	6	
Java:				
Batavia.....	do.....	46	45	Province.
East Java and Madura— Surabaya.....	July 24-Aug. 6.....	22	22	
Senegal:				Aug. 29-Sept. 11, 1927: Cases, 245; deaths, 116.
Cities—				
Dakar.....	Aug. 29-Sept. 11.....	14	8	
Rufisque.....	do.....	13	10	Including suburbs.
Interior—				
Baol district.....	do.....	32	11	
Cayor.....	do.....	184	85	
Thies.....	do.....	2	2	Town in interior.
Siam.....	Apr. 1-Aug. 13.....			Cases, 10; deaths, 7.

SMALLPOX

Algeria:			
Oran.....	Sept. 1-10.....	4	
Angola.....	June 1-30.....	13	
Do.....	July 1-15.....	5	
Brazil:			
Rio de Janeiro.....	Aug. 21-27.....	3	4

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 7, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada:				
Alberta.....	Sept. 11-17.....	5	-----	From outside localities.
Manitoba.....	do.....	7	-----	
Winnipeg.....	Sept. 10-16.....	4	-----	
Nova Scotia.....	Sept. 11-17.....	1	-----	
Ontario.....	do.....	12	-----	
Ottawa.....	Sept. 18-24.....	6	-----	
Toronto.....	Sept. 4-10.....	1	-----	
Great Britain:				
England and Wales.....	do.....	146	-----	
India:				
Bombay.....	Aug. 7-13.....	5	3	
Calcutta.....	Aug. 7-20.....	9	8	
Madras.....	Aug. 21-27.....	2	-----	
Rangoon.....	Aug. 7-20.....	8	2	
Iraq:				
Basra.....	Aug. 14-20.....	1	1	
Italy:				
Rome.....	July 4-10.....	1	-----	Consular district.
Java:				
Batavia.....	Aug. 14-20.....	4	-----	
East Java and Madura— Surabaya.....	July 24-30.....	1	-----	
Persia:				
Teheran.....	May 23-June 22.....	-----	6	
Portugal:				
Oporto.....	Sept. 3-9.....	1	-----	
Siam.....				July 31-Aug. 13, 1927: Cases, 20; deaths, 7. Apr. 1-Aug. 13, 1927: Cases, 192; deaths, 49.
Sumatra:				
Medan.....	Aug. 14-20.....	1	-----	
Syria:				
Damascus.....	Aug. 20-31.....	2	-----	
Union of South Africa:				
Orange Free State.....	Aug. 7-13.....	-----	-----	Outbreaks in one district.

TYPHUS FEVER

Chile:				
Valparaiso.....	Aug. 21-27.....	-----	1	July, 1927: Cases, 6.
Latvia.....				
Mexico:				
Mexico City.....	Sept. 4-10.....	4	-----	Including municipalities in Federal District.
Palestine.....				Aug. 30-Sept. 5, 1927: Cases, 3.
Haifa.....	Aug. 23-29.....	2	-----	In three localities.
Poland.....				Aug. 7-13, 1927: Cases, 11; deaths, 2.
Union of South Africa:				
Cape Province— Port Elizabeth.....	Aug. 7-13.....	1	-----	In native. Outbreaks in four districts.
Yugoslavia.....	Aug. 1-31.....	9	1	

YELLOW FEVER

Senegal:				
Island of Goree.....	Aug. 22-Sept. 4.....	2	2	Vicinity of Dakar.
Tiaroye.....	do.....	1	1	
Tivaouane.....	Sept. 5-11.....	1	-----	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927¹

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Aug. 13	11	3	Present.
Canton	May 1-July 23	16	7	
Foochow	July 24-30	1	1	
Hong Kong	July 17-23	2	2	
Kulangsu	June 21	1	1	
Shanghai	June 19-25	2	2	In international settlement and French concession.
Do.	July 31-Aug. 20	1	16	
Swatow	May 15-Aug. 6	138	13	
India:	Apr. 17-July 30			Cases, 125,674; deaths, 71,156.
Bombay	May 8-Aug. 6	103	50	
Calcutta	do.	580	355	
Karachi	May 29-June 4	1	1	
Madras	June 19-Aug. 20	628	333	
Rangoon	May 8-July 30	17	13	Cases, 11,145.
India, French settlements in	Mar. 30-June 30	15	8	
Indo-China (French)	Apr. 1-July 10			
Annam	do.	1,467		
Cambodge	do.	235		
Cochin-China	do.	1,354		
Saigon	June 4-July 21	10	4	
Tonkin	Apr. 1-June 30	8,089		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Aug. 27	353	264	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Manila	July 17-23	1	2	Final diagnosis not received.
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	
Palo	May 18	1	1	Cases, 252; deaths, 150.
Siam:	May 1-July 30			
Bangkok	do.	43	13	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Algeria:				
Algiers	Aug. 21-31	1		Cases, 80; deaths, 44.
Oran	do.	4	3	
Argentina:	Jan. 1-Aug. 2			
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				Present.
Merou	Reported July 14			
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	9 miles from port.
Azores:				
Ribeira Grande	June 12-18			
St. Michaels Island	May 15-July 30	3		

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya.....	Apr. 24-July 2.....	60	14	
Mombassa.....	July 24-30.....	1	1	
Nairobi.....	May 22-28.....	6		
Tanganyika.....	Mar. 29-May 28.....		37	
Do.....	July 24-Aug. 6.....		10	
Uganda.....	Jan. 1-Feb. 28.....	138	121	
Do.....	Mar. 27-June 18.....	366	300	
Canary Islands:				
Laguna district—				
Tejina.....	June 17.....	1		
Ceylon:				
Colombo.....	May 1-July 2.....	17	11	Plague rnts, 4.
China:				
Amoy.....	July 3-23.....			Present in surrounding country.
Tientsin.....	Aug. 14-20.....	2		
Ecuador:				
Guayaquil.....	June 1-July 31.....			Rats taken, 48,290; found infected, 34.
Egypt.....	May 1-July 8.....			Cases, 7; deaths, 2.
	Aug. 6-12.....			Cases, 5.
Alexandria.....	June 4-10.....	1		
Beni-Souef.....	June 4-July 13.....	5	2	
Biba.....	do.....	1		At Nama.
Dakhalia.....	June 24-July 9.....	6	1	
Minia.....	Aug. 8-9.....	4		
Port Said.....	June 24-July 21.....	4	1	
Tanta district.....	June 4-10.....	1		
Greece.....	May 1-June 30.....	4	3	
Athens.....	June 1-Aug. 29.....	3		Including Piraeus.
Mytilene.....	Aug. 9.....	1		
Patras.....	May 30-Sept. 4.....	8	1	
Hawaii Territory:				
Hamakua.....	July 15.....			1 plague rodent.
Honokaa.....	May 17-23.....	2	2	
Kukuihaele.....	Aug. 12-17.....	1	1	1 plague rodent.
Paaulo.....	July 26-Aug. 1.....		4	
India.....	Apr. 17-July 16.....			Cases, 21,814; deaths, 8,324.
Bombay.....	May 8-Aug. 3.....	87	74	
Madras.....	May 1-July 30.....	403	194	
Rangoon.....	May 8-Aug. 6.....	53	49	
Indo-China (French).....	Apr. 1-July 10.....	32		
Kwang-Chow-Wan.....	May 21-July 10.....	68		
Iraq:				
Baghdad.....	Apr. 8-May 28.....	12	1	
Java:				
Batavia.....	May 1-July 23.....	182	183	Province.
East Java and Madura.....	May 22-July 16.....	28	27	
Paseroean Residency.....	May 9.....			Outbreak reported at Nagdiwano.
Surabaya.....	Apr. 17-July 23.....	34	33	Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Madagascar.....				
Province—				
Ambositra.....	Mar. 16-July 15.....	94	87	
Antsirabe.....	Mar. 16-May 15.....	8	8	
Miarinarivo (Itasy).....	Mar. 16-July 15.....	65	59	
Moramanga.....	May 16-July 15.....	24	23	
Tananarive.....	Mar. 16-July 15.....	221	194	
Tananarive Town.....	Mar. 16-June 30.....	22	20	
Nigeria.....	Mar. 1-May 31.....	228	177	
Peru.....	Apr.—May 31.....			Cases, 22; deaths, 8.
Departments—				
Ica.....	Apr. 1-30.....	1		
Lambayeque.....	do.....	1		
Libertad.....	Apr. 1-May 31.....	7	4	
Lima.....	do.....	13	4	
Lima City.....	Apr. 1-30.....	5	1	
Senegal.....	May 23-Aug. 21.....			Cases, 656; deaths, 415.
Baol.....	June 2-Aug. 28.....	68	36	
Cayor Frontier.....	July 4-Aug. 23.....	353	240	
Dakar.....	June 20-Aug. 28.....	123	82	
Facel.....	July 6.....	17	8	
Guindel.....	June 20-25.....	11	2	
M'Bour.....	July 6-10.....	23	23	
Medina.....	June 13-19.....	2	2	
Pout.....	July 4-10.....	1		
Rufisque.....	May 23-Aug. 23.....	207	155	
Thies district.....	May 23-July 30.....	27	9	
Tivaouane.....	June 2-July 17.....	50	32	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Siam.....	Apr. 1-July 30.....	-----	-----	Cases, 10; deaths, 7.
Bangkok.....	May 8-June 11.....	2	1	
Syria:				
Belrut.....	June 11-July 10.....	3	-----	
Tunisia.....	Apr. 21-July 10.....	144	-----	
Tunis.....	July 25-Aug. 1.....	1	-----	
Turkey:				
Constantinople.....	May 13-19.....	1	-----	
Union of South Africa:				
Cape Province—				
Maraisburg district.....	May 1-14.....	2	2	Native.
Orange Free State—				
Edenburg district.....	July 17-28.....	3	3	Natives; on farm.
Rouxville district.....	July 24-Aug. 6.....	2	2	
On vessel:				
S. S. Avoroff.....	June 24-30.....	1	-----	On Greek warship at port of Athens.
S. S. Capatric.....	Aug. 23.....	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Eleano.....	Aug. 19.....	1	-----	At Piraeus, Greece.
S. S. Madonna.....	Aug. 24.....	1	-----	At Dakar, Senegal; from ports south.
S. S. Ransholm.....	Aug. 5.....	3	-----	At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Algeria.....	Apr. 21-July 10.....	-----	-----	Cases, 648.
Algiers.....	May 11-June 30.....	8	-----	
Oran.....	May 21-Aug. 10.....	47	-----	
Arabia:				
Aden.....	July 17-Aug. 1.....	2	1	
Brazil:				
Porto Alegre.....	July 1-31.....	5	-----	
Rio de Janeiro.....	May 22-Aug. 20.....	12	8	
British East Africa:				
Kenya.....	Apr. 24-May 14.....	7	14	
Tanganyika.....	Mar. 29-June 18.....	2	22	
Zanzibar.....	Apr. 1-May 31.....	19	7	
British South Africa:				
Northern Rhodesia.....	Apr. 30-Aug. 12.....	111	2	
Canada.....	June 5-Sept. 10.....	-----	-----	Cases, 447.
Alberta.....	June 12-Sept. 10.....	-----	-----	Cases, 97.
Calgary.....	June 12-Aug. 27.....	9	-----	
British Columbia—				
Vancouver.....	May 23-Sept. 4.....	4	-----	
Manitoba.....	June 5-Sept. 3.....	-----	-----	Cases, 31.
Winnipeg.....	June 12-Aug. 27.....	17	-----	
Ontario.....	June 5-Aug. 27.....	-----	-----	Cases, 177.
Ottawa.....	June 12-Sept. 17.....	132	-----	
Sarnia.....	Aug. 7-13.....	1	-----	
Toronto.....	June 19-July 23.....	9	-----	
Quebec.....	June 19-Aug. 27.....	15	-----	
Saskatchewan.....	June 12-Sept. 10.....	-----	-----	Cases, 104.
Moose Jaw.....	Aug. 14-Sept. 10.....	14	-----	
Regina.....	July 17-Aug. 27.....	10	-----	
Ceylon.....	May 1-7.....	-----	-----	Cases, 3; deaths, 1.
Colombo.....	July 31-Aug. 6.....	1	1	
China:				
Amoy.....	May 8-28.....	1	-----	
Do.....	July 3-16.....	-----	-----	Present in surrounding country.
Antung.....	July 4-31.....	3	-----	
Cheefoo.....	May 8-14.....	-----	-----	Present.
Foochow.....	May 8-Aug. 13.....	-----	-----	Do.
Hong Kong.....	do.....	20	19	
Manchuria—				
Anshan.....	May 22-28.....	1	-----	
Changehun.....	May 15-July 30.....	8	-----	
Dairen.....	May 2-July 3.....	10	5	
Fushun.....	May 15-July 30.....	10	-----	
Harbin.....	June 13-July 10.....	4	-----	
Kai-Yuan.....	July 3-9.....	2	-----	
Mukden.....	May 22-July 30.....	6	-----	
Pensihui.....	July 3-9.....	1	-----	
Saipingkai.....	May 8-July 9.....	3	-----	
Tientsin.....	May 8-July 30.....	18	-----	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Chosen	Feb. 1-May 31			Cases, 451; deaths, 195.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Selshin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim
Ecuador				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-June 30			Cases, 178.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-May 31	33	7	
Great Britain:				Cases, 2,618.
England and Wales	May 22-Sept. 3			
Birmingham	Aug. 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Sept. 3	13		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug. 13	5		
Sheffield	June 12-Aug. 6	25		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Salonika	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-July 30			Cases, 68,687; deaths, 18,006.
Bombay	May 28-Aug. 6	222	144	
Calcutta	May 8-Aug. 6	374	286	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Aug. 13	22	6	
Rangoon	May 8-Aug. 6	174	53	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-July 20			Cases, 314.
Saigon	May 14-July 21	2	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	Apr. 10-July 16	2	1	
Italy	Apr. 10-May 21	13		
Rome	June 13-19	1		
Jamaica	May 29-Aug. 27	30		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-July 23	3		
East Java and Madura	Apr. 24-July 9	12		
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-31			Deaths, 162.
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreón	Aug. 7-13		1	
Morocco	Apr. 1-June 30	154		
Netherlands India:				
Borneo—				
Holoe Soengul	Apr. 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-May 31	2,677	513	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-May 22		8	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Aug. 6	17	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Senegal:				
Medina	July 4-10	7		
Siara	Apr. 1-July 30			Cases, 172; deaths, 42.
Bangkok	May 1-July 23	13	7	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-11	2		
Switzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-20	1		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 17-23			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Aug. 31	26		
Oran	May 21-Aug. 31	34		
Bulgaria	Mar. 1-June 20			Cases, 206; deaths, 18.
Sofia	June 4-Aug. 5	2		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Aug. 6	4	1	
China:				
Manchuria—				
Harbin	July 25-31	3		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb. 1-May 31			Cases, 512; deaths, 42.
Chemulpo	May 1-July 31			
Gensan	do	4		
Seoul	Apr. 1-July 31	32	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 23-July 29			Cases, 130; deaths, 18.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-May 20	37	12	
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31	1	9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-June 30	26		
Lithuania	Feb. 1-June 30	303	37	
Mexico:				
Mexico City	May 29-Sept. 3	49		Deaths, 88.
San Luis Potosi	July 31-Aug. 6		1	Including municipalities in Federal district.
Morocco	Apr. 1-July 10	815		
Palestine:				
Haifa	May 24-Aug. 8			Cases, 16.
Jaffa	do	6		
Jerusalem	Aug. 2-16	2		
Mahneim	June 28-Aug. 15	3		
	May 17-23	1		In Safad district.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Palestine—Continued.				
Nazareth.....	July 19-25.....	1		
Safad.....	May 17-Aug. 8.....	10		
Peru:				
Arequipa.....	Apr. 1-30.....		1	
Poland.....	Apr. 10-Aug. 6.....	1,045	96	
Portugal:				
Lisbon.....	May 29-June 4.....	1		
Oporto.....	Aug. 20-27.....	1		
Rumania.....	Apr. 3-June 25.....	923	61	
Spain:				
Seville.....	Aug. 19-25.....		2	
Tunisia.....	Apr. 22-July 20.....			Cases, 138.
Tunis.....	July 5-Aug. 21.....	2		
Turkey:				
Constantinople.....	May 13-19.....		2	
Union of South Africa:				
Cape Province.....	Apr. 1-30.....			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Albany district.....	Apr. 1-Aug. 6.....	42	5	Outbreaks.
East London.....	June 5-11.....			Do.
Glen Gray district.....	May 22-28.....	1		Do.
Kentani district.....	May 1-7.....			Do.
Qumbu district.....	June 26-July 2.....			Do.
Umzimkulu district.....	May 1-7.....			Do.
Natal:				
Impendhle district.....	June 26-July 2.....			Do.
Orange Free State.....	Apr. 1-Aug. 6.....	7	3	
Orange Free State.....	June 5-11.....			Do.
Transvaal.....	Apr. 1-July 23.....	5		
Johannesburg.....	Apr. 1-30.....	1		
Johannesburg.....	July 3-Aug. 20.....	19	5	
Yugoslavia.....	May 1-July 31.....			Cases, 15; deaths, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi.....	Aug. 6.....	1	1	
Dahomey (West Africa):				
Porto Novo.....	July 1.....	1	1	In Syrian woman.
Gold Coast:				
Do.....	Apr. 1-May 31.....	45	20	
Ivory Coast:				
Do.....	Aug. 4.....	2		
Liberia:				
Monrovia.....	July 29.....	1	1	
Senegal:				
Do.....	May 29-July 8.....	4	5	Cases, 5; deaths, 2.
Dakar.....	May 27-July 31.....			
Do.....	July 9.....	1		
Do.....	Aug. 8.....	2	2	
Do.....	Sept. 17.....			Present.
Khembole.....	Aug. 1-14.....	3		
M'Bour.....	Aug. 1-14.....	5	5	
Ouakam.....	May 27-June 19.....	4	2	
St. Louis.....	June 2-Aug. 14.....	2	2	
Thies.....	Aug. 1-14.....	2	2	
Tivaouane.....	July 10.....	1	1	In European.
Togoland:				
Meiatza.....	May 27-June 8.....	5	5	
Meiatza.....	Aug. 15-21.....	1	1	